SONY®

CAMERA CONTROL UNIT

CCU-300P

OPERATION AND MAINTENANCE MANUAL

2nd Edition (Revised 14)

Serial No. 10201 to 13110

SONY®

CAMERA CONTROL UNIT

CCU-300P

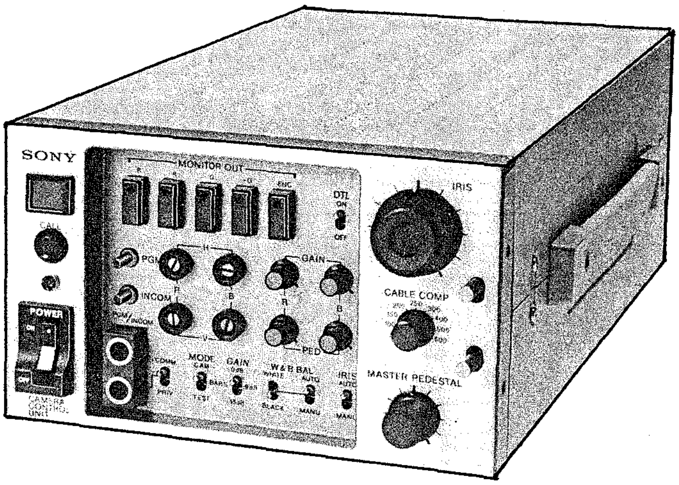
SONY
MONITOR OUT
DTL
ON
OFF
IRIS
PGM
INCOM
GAIN
PED
CABLE COMP
MASTER PEDESTAL
POWER
MODE
GAIN
W & B BAL
IRIS
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TABLE OF CONTENTS
INHALTSVERZEICHNIS

1. OPERATION

Compatible Cameras 1-1
Features 1-1
Installation Precautions 1-1
Specifications 1-2
Mounting A CCU Adapter 1-3
  How to attach the CCU adapter using Bracket A . . . 1-4
  How to attach the CCU adapter using Bracket B . . . 1-5
Power Supply Connections 1-6
Camera Connections 1-7
Example of System Connections 1-9
Diagrams 1-10
Location of Parts and Controls 1-12
  Front Panel 1-12
  Controls 1-14
  Rear Panel 1-16
  Internal Controls 1-18
  CCU Adapter 1-20
Operating Cautions 1-21
Packing 1-22

1. BEDIENUNG

Kompatible Kamera 1-23
Merkmale 1-23
Zur Beachtung bei der Installation 1-23
Technische Daten 1-24
Montage des CCU-Adapters an der Kamera 1-25
  Montage des CCU-Adapters bei Verwendung der Montageplatte A 1-26
  Montage des CCU-Adapters bei Verwendung der Montageplatte B 1-27
Stromversorgungsanschlüsse 1-28
Kameraanschlüsse 1-29
Beispiele für Systemanschlüsse 1-31
Diagramme 1-32
Lage der Teile und Bedienungselemente 1-34
  Frontplatte 1-34
  Rückwärtige Anschlußplatte 1-38
  Einstellelemente im Geräteinneren 1-40
  CCU-Adapter 1-42
Vorsicht beim Betrieb 1-43
Verpackung 1-44

2. COVER REMOVAL

Front Panel Opening 2-1
Cover Removal 2-2

3. ALIGNMENT

3-1. Test Equipment 3-1
  3-1-1. Equipment Required 3-1
  3-1-2. Video Signal Required 3-1
3-2. Presetting of Each Switch and Control 3-2
  3-2-1. Front Panel 3-2
  3-2-2. Rear Panel 3-2
  3-2-3. Printed Circuit Board 3-2
3-3. Connection 3-2
3-4. Power Supply System Adjustment 3-3
  3-4-1. Reg 9.5V Adjustment 3-3
  3-4-2. Reg 9V Adjustment 3-3
  3-4-3. Reg –9V Adjustment 3-3
  3-4-4. Battery Alarm Adjustment 3-3
3-5. Genlock Control System Adjustment 3-4
  3-5-1. H Phase Control Calibration 3-4
  3-5-2. Burst Gate Pulse Width Adjustment 3-4
  3-5-3. Frame Gate Pulse Width Adjustment 3-4
3-6. Camera Control System Adjustment 3-5
  3-6-1. Data Latch Timing Adjustment 3-5
  3-6-2. Latch Timing Pulse Width Adjustment 3-5
3-7. Video (VBS/VB) Cable Compensator System Adjustment 3-5
  3-7-1. Cable Compensator Gain (0m) Adjustment and DC Balance Set 3-5
  3-7-2. Cable Compensation (150m) Adjustment 3-6
  3-7-3. Cable Compensation (300m) Adjustment 3-6
  3-7-4. DG Adjustment 3-7
  3-7-5. VB Output Signal Adjustment 3-7
3-8. Return Video Amp System Adjustment 3-8
  3-8-1. Return Video Level (VA-6 Board Input) Adjustment 3-8
  3-8-2. Return Video Output Level Adjustment 3-8
  3-8-3. Return Video DC Offset Adjustment 3-9
3-9. R•B•G Video Amp System Adjustment 3-9
  3-9-1. R•B•G Gain Adjustment 3-9
  3-9-2. R•B•G Cable Compensator (150m) Adjustment . . . 3-10
  3-9-3. R•B•G Cable Compensator (300m) Adjustment . . . 3-10
  3-9-4. R•B•G DC Offset Adjustment 3-11
3-10. Control Presetting 3-11
  3-10-1. R•B Gain, Pedestal Presetting 3-11
  3-10-2. Low Iris Control Presetting 3-12
3-11. Audio System Adjustment 3-12
  3-11-1. Audio Amp Bias Setting 3-12
  3-11-2. Audio Amp Idling Current Adjustment 3-12
  3-11-3. Audio Attenuator Adjustment 3-13
  3-11-4. Side Tone Setting 3-13
  3-11-5 Mic Freq. & Level Adjustment 3-13

4. DIAGRAMS

Overall Block Diagram 4-1
R, G, B Cable Compensator Block Diagram 4-5
  VA-5 Board
Video (VBS) Cable Compensator Block Diagram 4-7
  VA-6 Board
Power Supply and Camera Control System (1) Block Diagram 4-9
  PW-47 Board
Camera Control Signal Decoder Block Diagram 4-11
  CO-5 Board
Camera Control System (2) Block Diagram 4-12
  IF-29 Board
Genlock Control Block Diagram 4-13
  SG-31A Board
Audio System Block Diagram 4-15
  AU-14 Board
  AU-15 Board
PW-47 Board........................ 4-17
SG-31A Board........................ 4-12
VA-5 Board........................ 4-25
VA-6 Board........................ 4-29
AU-14 Board........................ 4-33
IF-29 Board........................ 4-37
CCU Frame Wiring 4-41
  CN-19 Board
  FU-9/9A Board
  LP-10 Board
  SW-42 Board
AU-15 Board 4-46
CO-5 Board 4-51
CCU Adaptor Frame Wiring 4-55
  RC-13 Board

5. SPARE PARTS

5-1. Parts Information 5-1
5-2. Exploded View 5-3
  Front Panel Block 5-3
  Chassis Block 5-5
  Rear Panel Block 5-7
  CCU Adaptor Block 5-9
5-3. Electrical Parts List 5-11
5-4. Packing Material and Accessory (Supplied) 5-31

SECTION 1
OPERATION

The CCU-300P is a camera control unit for use with Sony's BVP-300P color cameras, and it is provided with a number of convenient remote control operation and adjustment functions for electronic field product applications and the preparation of programs by production houses.

COMPATIBLE CAMERA

Depending on the serial number of the BVP-300P camera series, some of the functions of the CCU-300P series camera control unit may not work.

Model	Area	Usable serial number
BVP-300P	PAL	No. 10101 and higher

If the serial number of the unit is below that given in the above table, remodeling is necessary. In cases like this, consult with your Sony dealer.

FEATURES

Compact size and light weight
The unit features a compact size and a light weight for maximum handling ease when using the color camera outdoors. All the operation and adjustment functions are housed in a single cabinet.

AC/DC 2-way power operation
The power supply section employs a compact and highly efficient switching regulator. The unit may be driven by AC power (90 – 130 V, 200 – 260 V) or by DC power (10.5–17V).

600 m maximum cable length
When the camera uses a 1.5-inch viewfinder or when it contains a power supply, the camera cable (CCW cable) can be extended to a maximum of 600 meters. A maximum extension of 300 meters is possible when the camera uses the optional BVF-5 5-inch viewfinder (with cable compensation). It is possible to connect a portable video tape recorder (BVU-50PS or BVH-500P) using the 14-pin CCQ cable.

Gen-lock function
Besides internally generated sync signals, gen-lock is also possible with external sync signals. It is also possible to adjust the horizontal phase and the subcarrier phase of the external signals for gen-lock.

Multiple-system outputs
A wide range of output signals can be yielded: VBS camera output, camera output for selecting between VBS and VB, cable-compensated chroma key output (R, G, B), signal output for registration adjustment and other monitoring applications, and waveform monitoring output (R, G, B, encoder, sync, blanking).

Mixing monitor
This function makes it possible to mix the output signals from the camera with the return video signals and to monitor the mixing signals returned to the camera (mixing is adjustable).

Double jack for headset
A double jack headset can be used so that the program sound and the intercom sound can be heard simultaneously. (A single jack headset may also be used.)

Incorrect operation prevention
The controls for adjustment are set into the front panel and to forestall incorrect operation under on-air conditions. Also, the AC power cord is provided with a band so that it does not work free in order to prevent power trouble.

Easy maintenance and inspection
The front panel is designed to open and close by finger-tip control, and even when the unit is mounted in a rack, it is easy to perform internal inspections and adjustments.

INSTALLATION PRECAUTIONS

Location
- Install the unit in a location which is as dry and well ventilated as possible.
- Avoid installing the unit near heat sources and in rooms with a high temperature.
- Avoid locations susceptible to dust and a great deal of vibration.
- Avoid places with strong electrical and magnetic fields.
- Avoid places where the unit will be exposed to direct sunlight, powerful electric lights and flashes.

Rack mounting
- By using the optional RMM-301 rack-mount brackets, it is possible to mount two units side by side in an EIA standard rack.
- Mount the units so that they are not positioned above a power supply of other heat-generating unit.

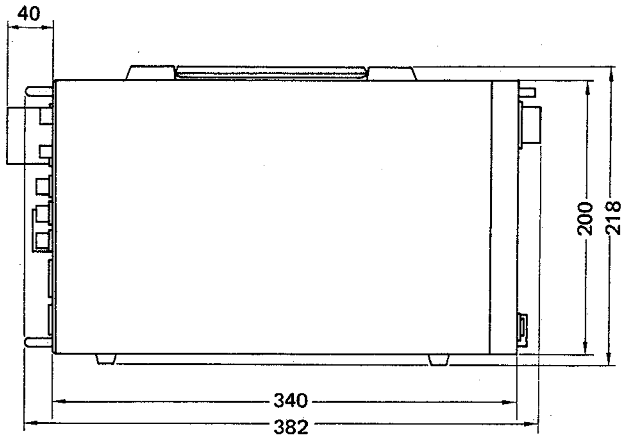
SPECIFICATIONS

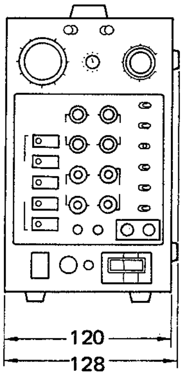
Power requirements	AC 100 V ±10%, 120 V ±10%/220 V ±10% 240 V ±10% (selectable) 50/60 Hz DC 10.5–17V
Power consumption	AC 85 W DC 49 W
Output signals	VIDEO OUT 1.0 Vp-p, VBS, 75 ohms (BNC type x1) 1.0 Vp-p, VBS/VB selectable, 75 ohms (BNC type x 1) R, G, B OUT (BNC type x3) 0.7 Vp-p, V, 75 ohms MONITOR OUT (BNC type x1) R, G, B, –G composite signals or encoder output signal 1.0 Vp-p, VS/VBS, 75 ohms WAVEFORM OUT (16-pin connector) ENCODER OUT: 1.0Vp-p, VBS, high impedance R OUT: 0.7Vp-p, V, 75 ohms G OUT: 0.7Vp-p, V, 75 ohms B OUT: 0.7Vp-p, V, 75 ohms SYNC OUT: 3.5 Vp-p, high impedance BLANKING OUT: 5.0 Vp-p, high impedance DC OUT: 10.5–17V GND MIC OUT (XLR-3-31) 0 dB/–20 dB (selectable) impedance 600 ohms
Control items	Iris (auto/manual) white balance (auto/manual) black balance (auto/manual) gain (R/B) pedestal (master/R/B) centering (R/B-horizontal, R/B-vertical) gain select (0 dB/+9 dB/+18 dB) mode select (camera/bars/test) incom select (common/private) detail (ON/OFF) phase (H/SC) cable compensation tally call

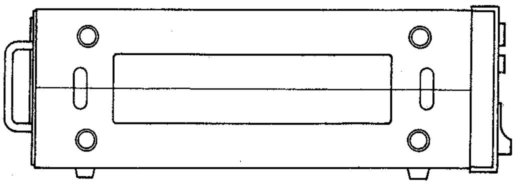
Cable compensation	0 (25m)/50/100/150/200/250/300 m (selectable in 7 stages): 5.5 MHz ±0.5 dB 400/500/600 m (selectable in 3 stages): 4.0 MHz ±1 dB
Gen-lock	Horizontal phase adjustable range: +3 μ sec to –1.5 μsec or more (with respect to input phase) SC phase adjustment range: 360° Coupling accuracy: H: Within ±0.01 μsec SC: Within ±1°
Iris adjustment	Close ↔ open, auto/manual selectable
Master pedestal adjustment	More than ±30% of rating
R/B gain adjustment	More than ±20% of rating
R/B pedestal adjustment	More than ±20% of rating
Centering adjustment	More than ±1% of rating
Tally/call	Contact and power supply (DC 12V/24V) (XLR-7-32)
Intercom	INPUT: –16 dB, 600 ohms balanced OUTPUT: 0 dB, 600 ohms balanced (XLR-7-32)
Program audio in	0 dBm/–20 dBm, 600 ohms balanced (XLR-3-31)
Remote control	Local/remote
Ambient operating temperature	–10°C to +45°C (CCU and CCU adapter)
Dimensions	CCU: 218(W) x 128(H) x 382(D) mm CCU adapter: 77(W) x 146.5(H) x 104(D) mm
Weight	CCU: 6.5 kg CCU adapter: 0.7 kg
Accessories	Power cord x 1 Centering knob x 4 Power fuse (4A) x 2 DC fuse (2A) x 2 DC microfuse (4A) x 2 Extension board x 1 Bracket A X 1 Bracket B X 1 CCU adapter mounting screw X 2 Screw (⊕ B 4 x 8) x 4 Screw (⊕ B 3 x 16) x 2 Screw (⊕ B 4 x 16) x 2 Connector (16-pin) Connector (24-pin) Connector (XLR-7-11C)

Optional accessories

Camera cable (41-pin, 34-core)
CCW-25 (25 m), CCW-50 (50 m), CCW-100 (100 m)
Rack mount adapter (RMM-301)

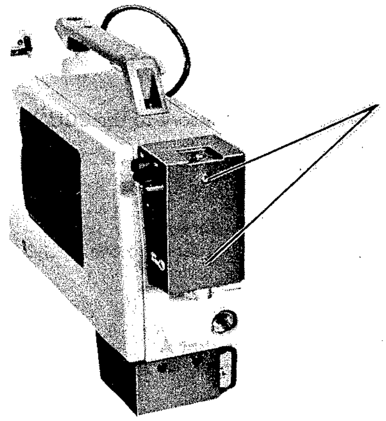






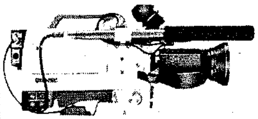
MOUNTING A CCU ADAPTER

When using a CCU-300P camera control unit, mount a CCU adapter on the rear of your camera.
First, remove the connector box at the rear of the camera:



Remove the two hexagonal socket head screws (4 x 30).
(Use a 4mm L-shaped hexagonal wrench.)

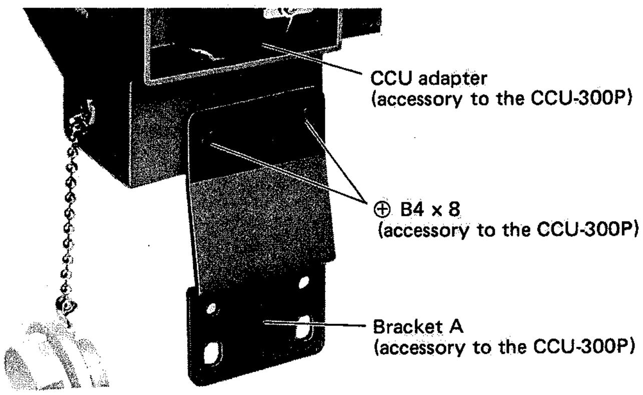
Use the bracket ass'y and/or Bracket A or Bracket B, depending on the model of your camera. Refer to the following table.

Model of your camera	**BVP-300P**	**BVP-300P or BVP-300AP**		**BVP-300AP or BVP-330P**
		Camera on which the bracket ass'y has been mounted	Camera on which the bracket ass'y has not been mounted	 BVP-330P
When using the VCT-300 tripod attachment	Bracket ass'y Bracket A	Bracket A	Bracket ass'y Bracket A	Bracket B
When not using the VCT-300 tripod attachment	Bracket B	Bracket A	Bracket B	Bracket B

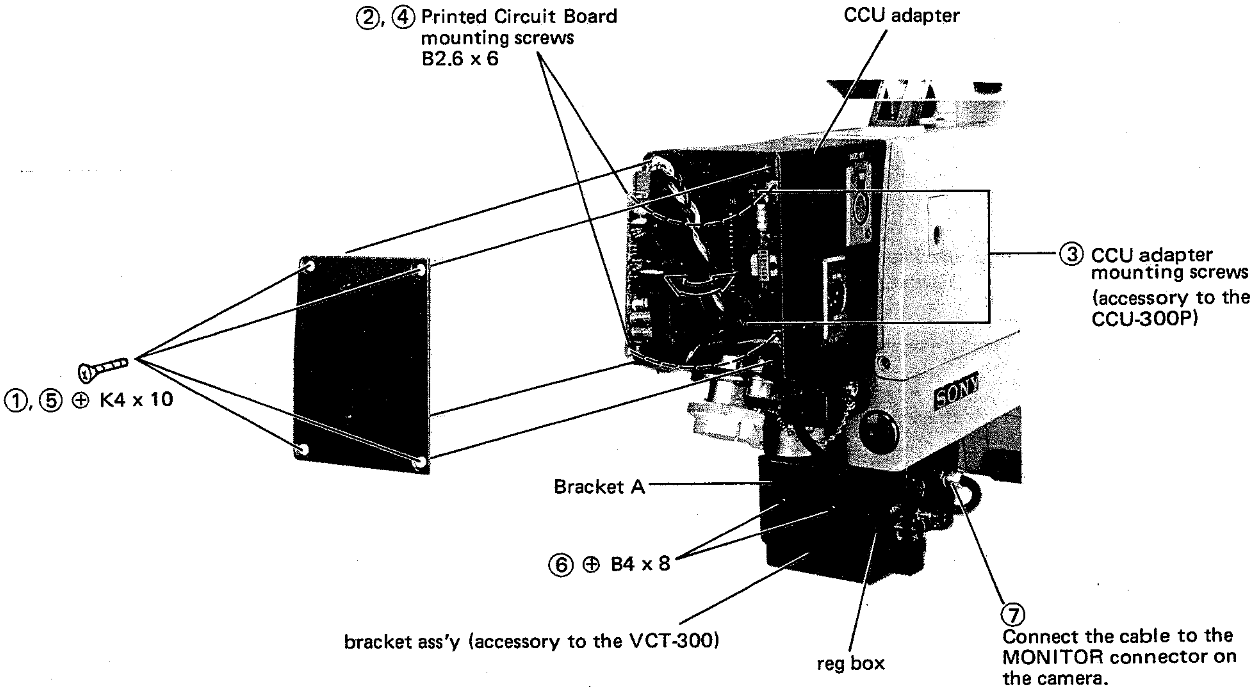
To attach the bracket ass'y, refer to the operation and maintenance manual of the VCT-300 tripod attachment.

How to attach the CCU adapter using Bracket A

1. Attach Bracket A to the CCU adapter.

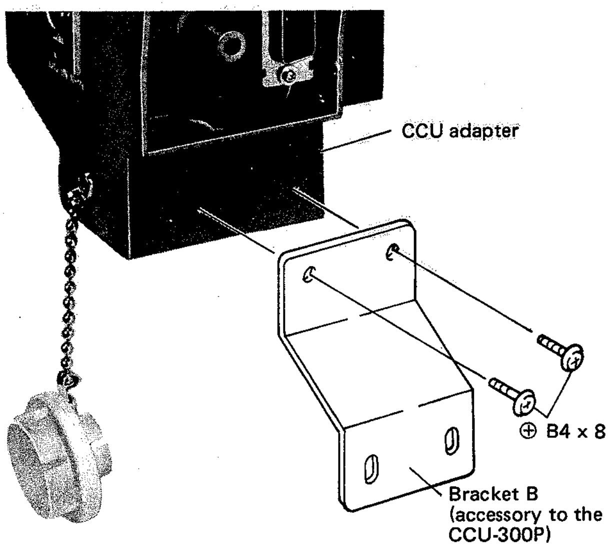

CCU adapter
(accessory to the CCU-300P)
⊕ B4 x 8
(accessory to the CCU-300P)
Bracket A
(accessory to the CCU-300P)

2. Mount the CCU adapter on the camera.
   Removal: ①,②
   Installation: ③,④,⑤,⑥,⑦

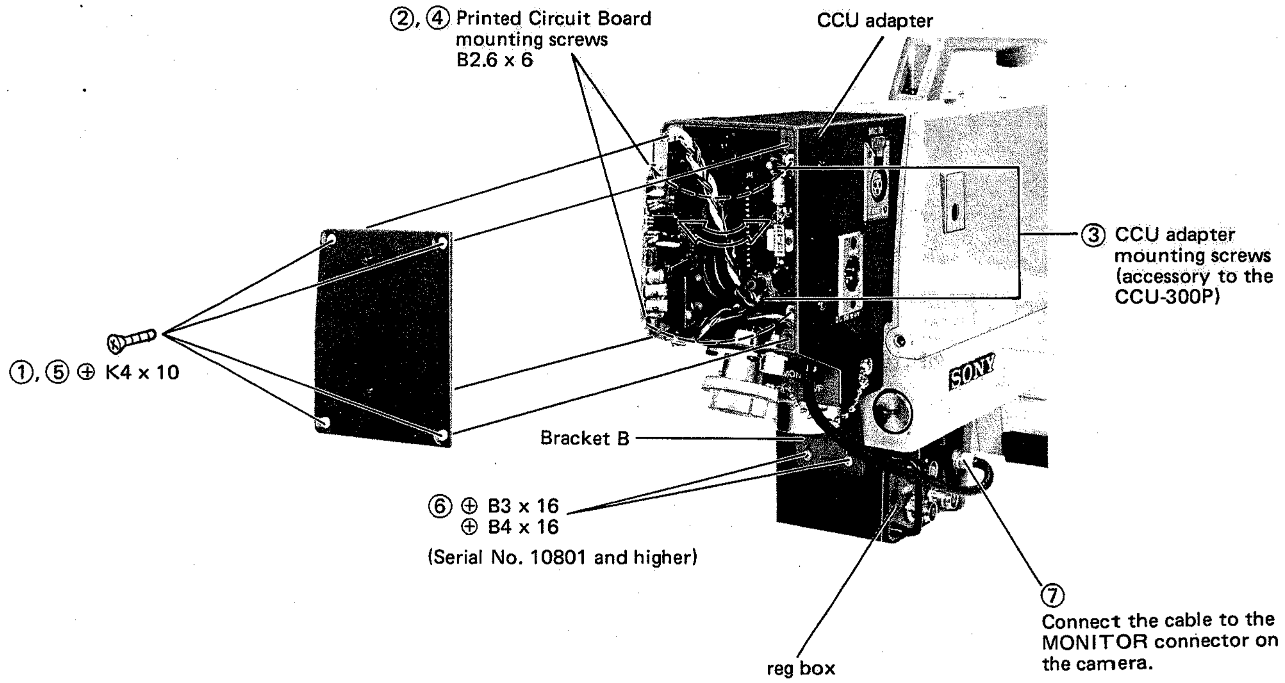

②, ④ Printed Circuit Board mounting screws B2.6 x 6
CCU adapter
③ CCU adapter mounting screws (accessory to the CCU-300P)
①, ⑤ ⊕ K4 x 10
Bracket A
⑥ ⊕ B4 x 8
bracket ass'y (accessory to the VCT-300)
reg box
⑦ Connect the cable to the MONITOR connector on the camera.

How to attach the CCU adapter using Bracket B

1. Attach Bracket B to the CCU adapter.


CCU adapter
⊕ B4 x 8
Bracket B (accessory to the CCU-300P)

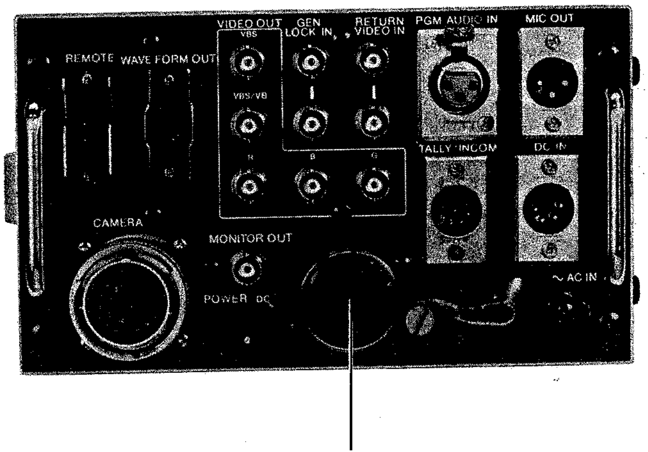
2. Mount the CCU adapter on the camera.
   Removal: ①, ②
   Installation: ③, ④, ⑤, ⑥, ⑦


②, ④ Printed Circuit Board mounting screws B2.6 x 6
CCU adapter
③ CCU adapter mounting screws (accessory to the CCU-300P)
①, ⑤ ⊕ K4 x 10
Bracket B
⑥ ⊕ B3 x 16
⊕ B4 x 16
(Serial No. 10801 and higher)
⑦
Connect the cable to the MONITOR connector on the camera.
reg box
SONY

POWER SUPPLY CONNECTIONS

AC operation

1. Check that the power line voltage selector is set to the value of the voltage used in your area. If it is not, reset the selector.

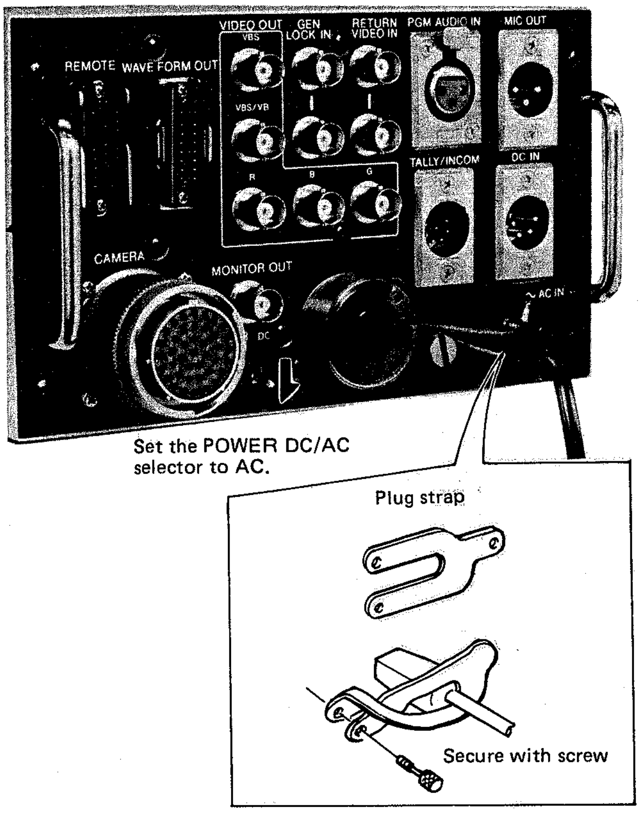

VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
~ AC IN

Remove the screw and change so that the voltage indication of the area is visible.

100 V: 100V ± 10%
220 V: 220V ± 10%
120 V: 120V ± 10%
240 V: 240V ± 10%

If a 220 V power is supplied with the power line voltage selector set at 100 V, the CCU-300 will be damaged and the fuse will blow.

2. Plug in the power cord and secure it with the plug strap that will prevent it from working loose.


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
DC
~ AC IN

Set the POWER DC/AC selector to AC.

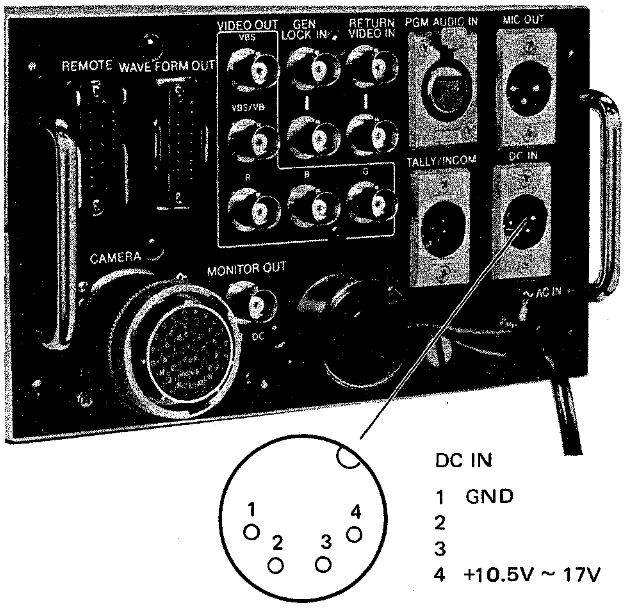
Plug strap

Secure with screw

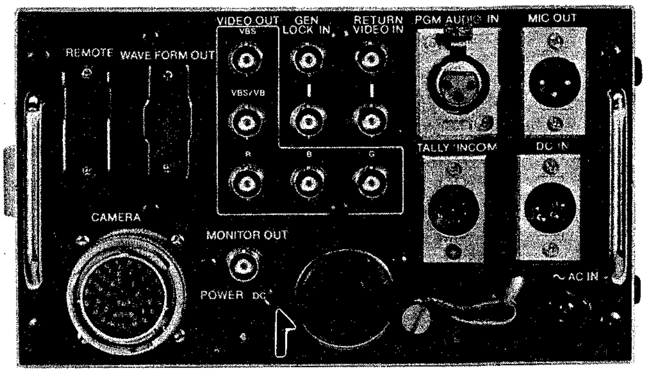
3. Set the POWER DC/AC selector to AC (see figure above).

DC operation

1. Connect the DC10.5 – 17V power supply to the DC IN connector (XLR-4-32).


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
DC
~ AC IN
1
2
3
4
DC IN
1 GND
2
3
4 +10.5V ~ 17V

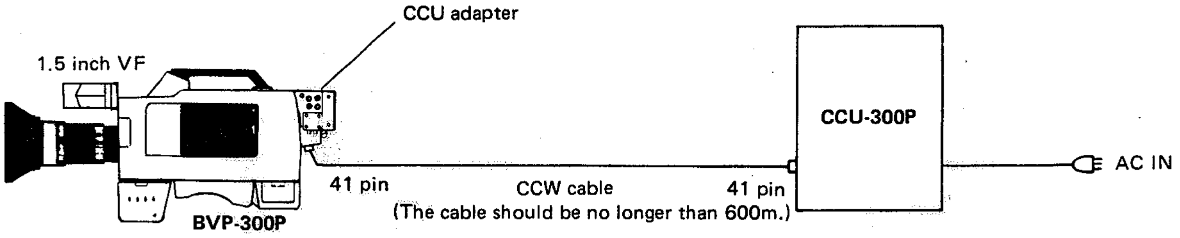
2. Set the POWER DC/AC selector to DC.


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
~ AC IN

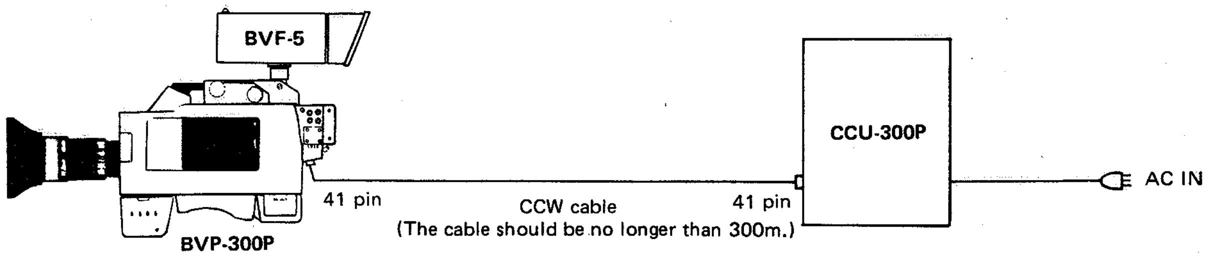
This selector serves as the power switch with DC operation. Once set to the DC position, the DC power is switched on.

CAMERA CONNECTIONS

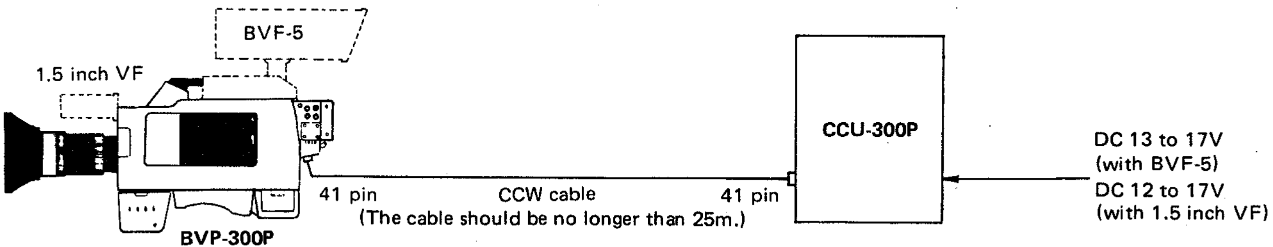
AC power operation


CCU adapter
1.5 inch VF
CCU-300P
AC IN
41 pin
CCW cable
41 pin
(The cable should be no longer than 600m.)
BVP-300P

- The cable should be no longer than 300 meters when the BVF-5 (optional) viewfinder is used.

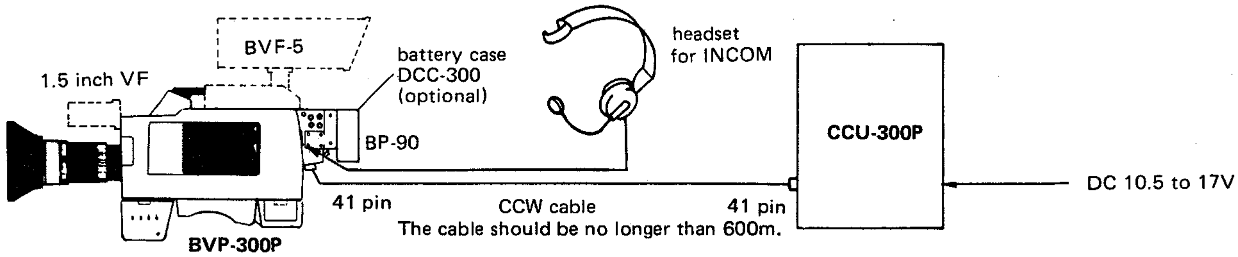

BVF-5
CCU-300P
AC IN
41 pin
CCW cable
41 pin
(The cable should be no longer than 300m.)
BVP-300P

DC power operation


BVF-5
1.5 inch VF
CCU-300P
DC 13 to 17V
(with BVF-5)
DC 12 to 17V
(with 1.5 inch VF)
41 pin
CCW cable
41 pin
(The cable should be no longer than 25m.)
BVP-300P

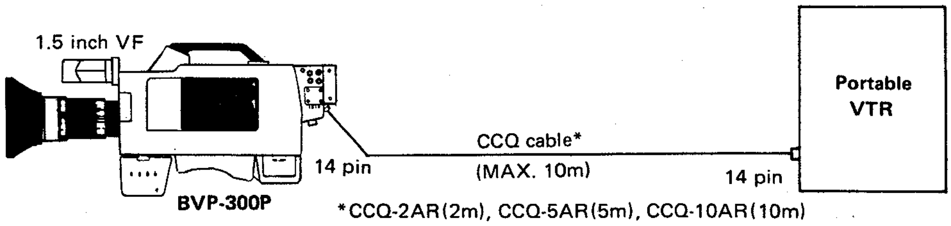
The cable should be no longer than 50m when the DC input is 14 to 17V with BVF-5 or 1.5 inch VF.

- The cable should be no longer than 600 meters when the camera has a bult-in battery (see figure below).
- The battery works about 1 hour with BVF-5 and works about 2 hours with 1.5 inch VF.


BVF-5
battery case
DCC-300
(optional)
headset
for INCOM
1.5 inch VF
CCU-300P
BP-90
DC 10.5 to 17V
41 pin
CCW cable
41 pin
The cable should be no longer than 600m.
BVP-300P

When using a portable VTR

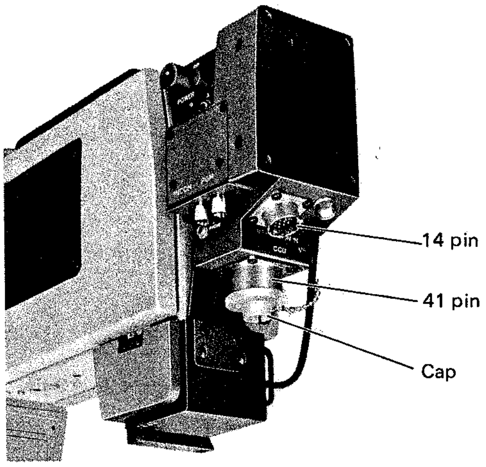
- The BVF-5 cannot be used when the power is supplied from the portable VTR.


1.5 inch VF
Portable
VTR
CCQ cable*
14 pin
(MAX. 10m)
14 pin
BVP-300P

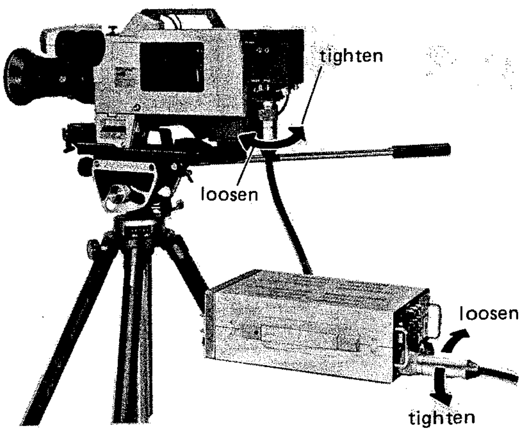
*CCQ-2AR(2m), CCQ-5AR(5m), CCQ-10AR(10m)

Caution

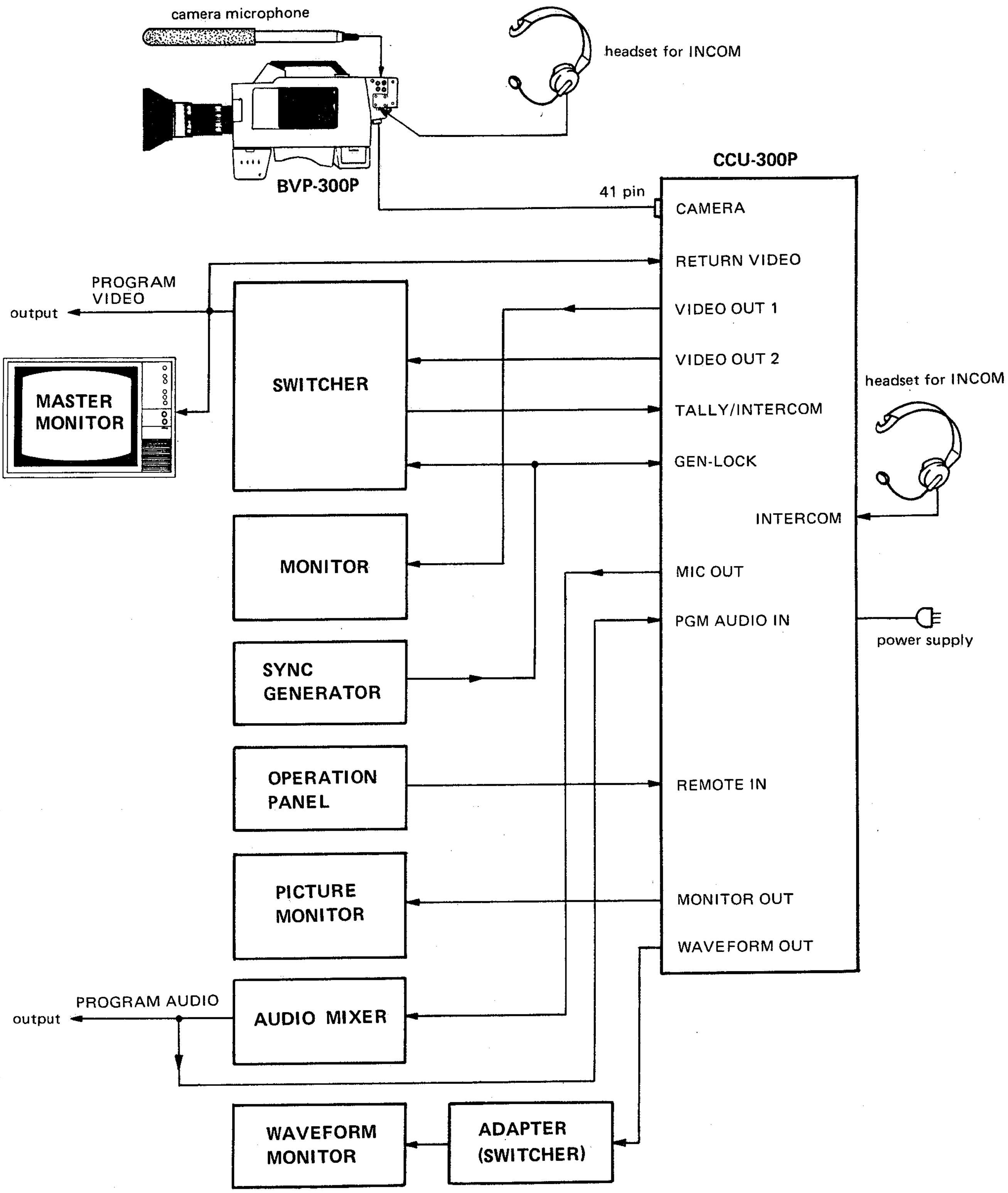
Under no circumstances should the 41-pin and 14-pin CCU adapter connectors **be used together.**
Place the cap on the connector which is not being used.


14 pin
41 pin
Cap

- Plug in the CCW cable, taking care to align the pin positions. When the coupling is rotated clockwise, the cable at the camera end is tightened and loosened at the CCU end.

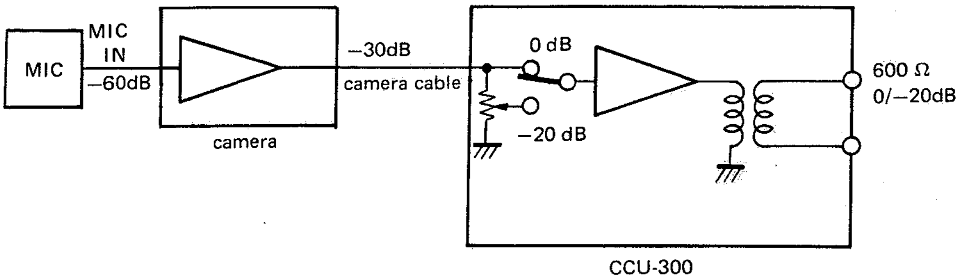

tighten
loosen
loosen
tighten

EXAMPLE OF SYSTEM CONNECTIONS

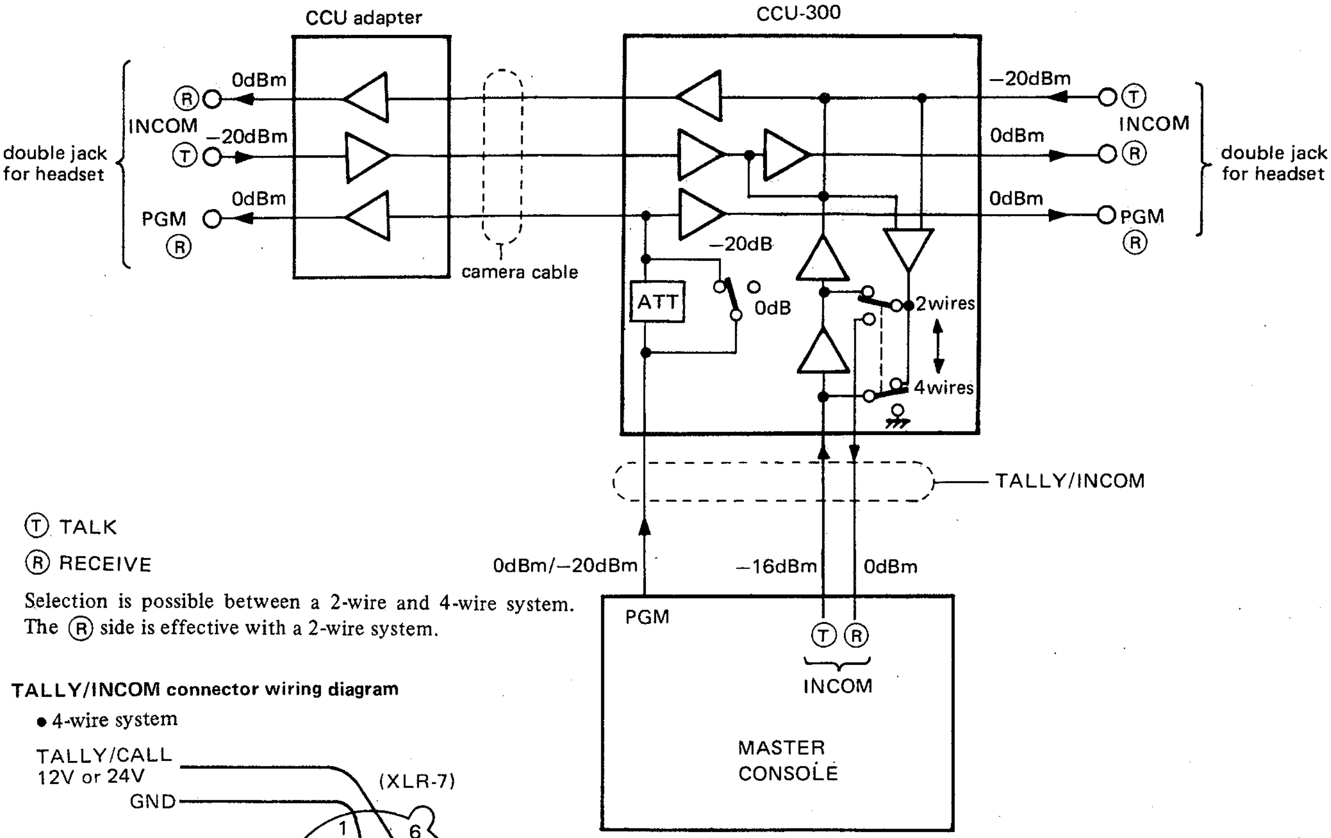

camera microphone
headset for INCOM
BVP-300P
CCU-300P
41 pin
CAMERA
RETURN VIDEO
PROGRAM VIDEO
output
VIDEO OUT 1
VIDEO OUT 2
MASTER MONITOR
SWITCHER
TALLY/INTERCOM
headset for INCOM
GEN-LOCK
INTERCOM
MONITOR
MIC OUT
PGM AUDIO IN
power supply
SYNC GENERATOR
OPERATION PANEL
REMOTE IN
PICTURE MONITOR
MONITOR OUT
WAVEFORM OUT
PROGRAM AUDIO
output
AUDIO MIXER
WAVEFORM MONITOR
ADAPTER (SWITCHER)

DIAGRAMS

Audio system diagram


MIC
MIC IN
−60dB
−30dB
camera cable
camera
0 dB
−20 dB
600 Ω
0/−20dB
CCU-300

PGM AUDIO/INCOM system diagram


CCU adapter
CCU-300
double jack for headset
Ⓡ
INCOM
Ⓣ
PGM
Ⓡ
OdBm
−20dBm
OdBm
camera cable
−20dBm
OdBm
OdBm
INCOM
Ⓣ
Ⓡ
PGM
Ⓡ
double jack for headset
−20dB
ATT
0dB
2wires
4wires
TALLY/INCOM
0dBm/−20dBm
−16dBm
0dBm
PGM
Ⓣ Ⓡ
INCOM
MASTER CONSOLE

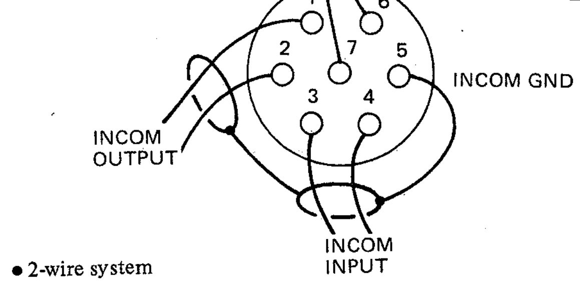
Ⓣ TALK

Ⓡ RECEIVE

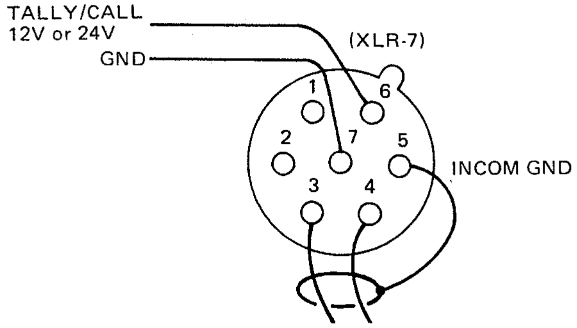
Selection is possible between a 2-wire and 4-wire system.
The Ⓡ side is effective with a 2-wire system.

TALLY/INCOM connector wiring diagram

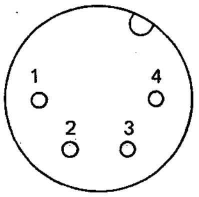
- 4-wire system


TALLY/CALL 12V or 24V
GND
(XLR-7)
1
6
2
7
5
3
4
INCOM GND
INCOM OUTPUT
INCOM INPUT

- 2-wire system

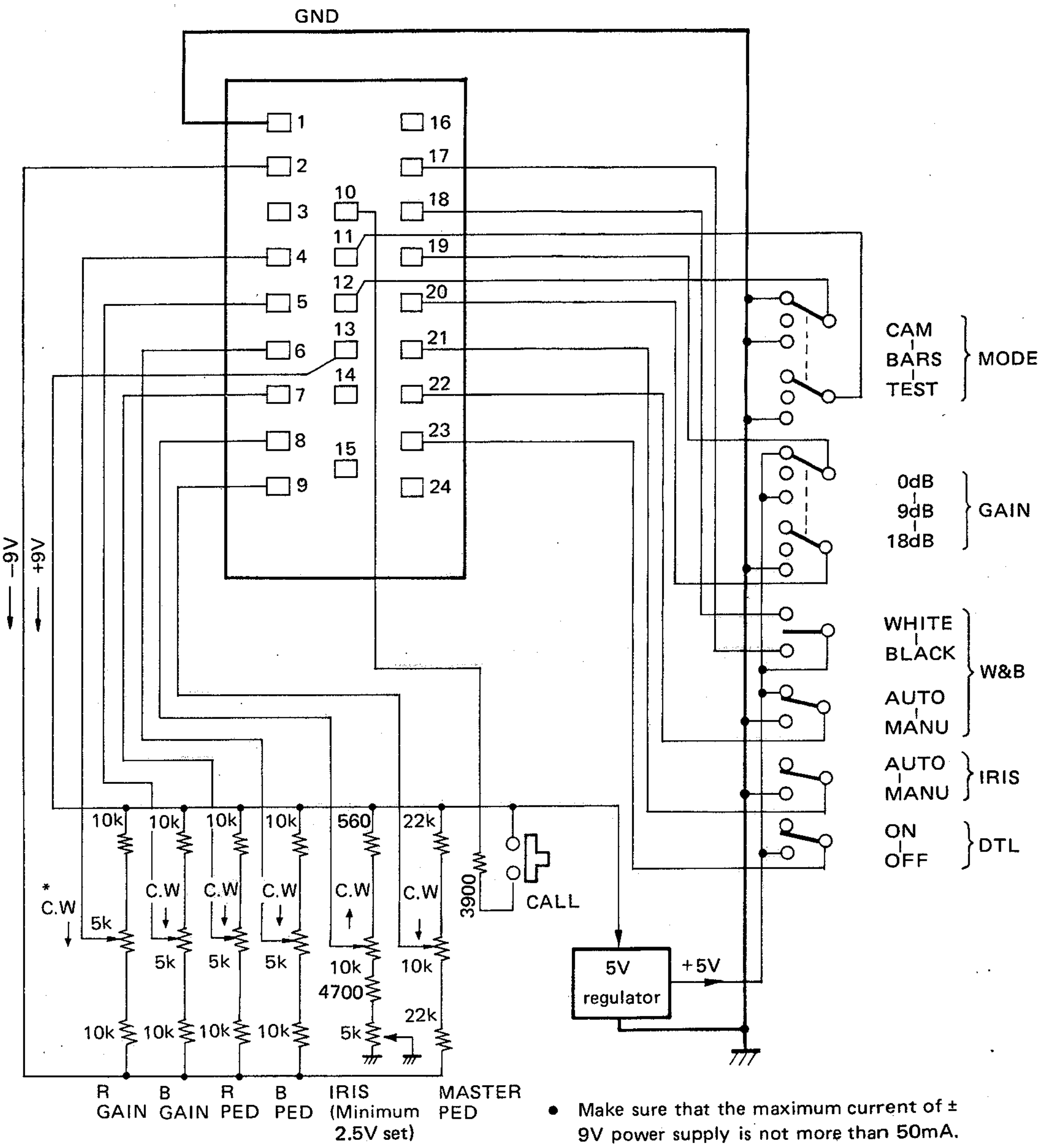

TALLY/CALL 12V or 24V
GND
(XLR-7)
1
6
2
7
5
3
4
INCOM GND

DC IN connector wiring diagram



1. GND
2.
3.
4. +12 ~ 17V

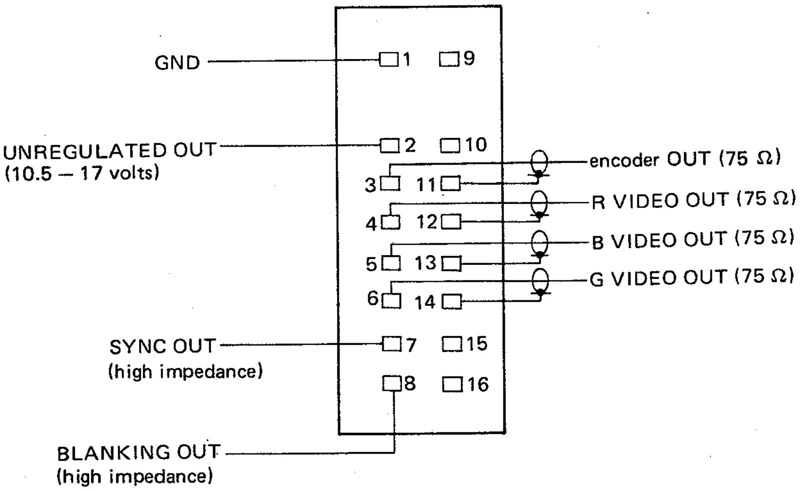
REMOTE connector wiring diagram (for OCP)


GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
−9V
+9V
CAM
BARS
TEST
MODE
0dB
9dB
18dB
GAIN
WHITE
BLACK
AUTO
MANU
W&B
AUTO
MANU
IRIS
ON
OFF
DTL
10k
10k
10k
10k
560
22k
3900
CALL
*
C.W
5k
C.W
C.W
C.W
C.W
C.W
5k
5k
5k
10k
4700
10k
22k
10k
10k
10k
10k
5k
5V
regulator
+5V
R
GAIN
B
GAIN
R
PED
B
PED
IRIS
(Minimum
2.5V set)
MASTER
PED

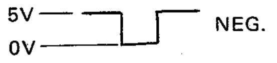
* C.W means clockwise.

- Make sure that the maximum current of ± 9V power supply is not more than 50mA.

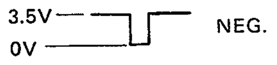
WAVEFORM OUT connector wiring diagram


GND
1
9
UNREGULATED OUT
(10.5 – 17 volts)
2
10
3
11
4
12
5
13
6
14
encoder OUT (75 Ω)
R VIDEO OUT (75 Ω)
B VIDEO OUT (75 Ω)
G VIDEO OUT (75 Ω)
SYNC OUT
(high impedance)
7
15
8
16
BLANKING OUT
(high impedance)

- UNREGULATED
  Max. 0.1-Amp.
- BLANKING OUT (High Impedance)



- SYNC OUT (High Impedance)

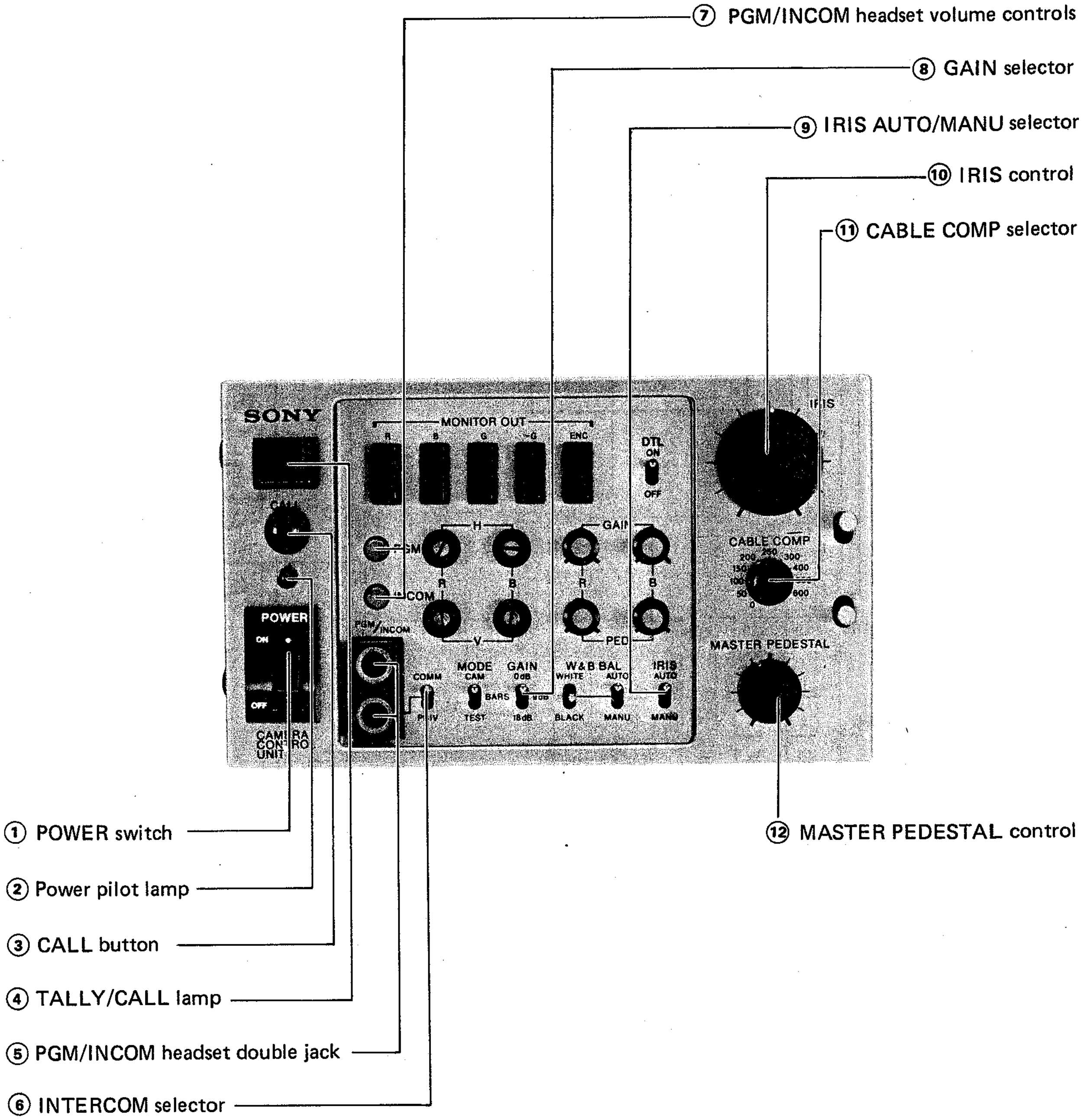


- Make sure that the encoder, sync, blanking signals are received by an emitter follower, etc. with a high impedance.

LOCATION OF PARTS AND CONTROLS

FRONT PANEL

Main Controls


⑦ PGM/INCOM headset volume controls
⑧ GAIN selector
⑨ IRIS AUTO/MANU selector
⑩ IRIS control
⑪ CABLE COMP selector
⑫ MASTER PEDESTAL control
① POWER switch
② Power pilot lamp
③ CALL button
④ TALLY/CALL lamp
⑤ PGM/INCOM headset double jack
⑥ INTERCOM selector
SONY
MONITOR OUT
R
B
G
-G
ENC
DTL
ON
OFF
IRIS
CALL
PGM
COM
H
GAIN
R
B
R
B
V
PED
CABLE COMP
200
250
300
150
400
100
500
50
600
0
MASTER PEDESTAL
POWER
ON
OFF
CAMERA CONTROL UNIT
PGM/INCOM
COMM
PRIV
MODE
CAM
BARS
TEST
GAIN
0dB
9dB
18dB
W&B BAL
WHITE
BLACK
AUTO
MANU
IRIS
AUTO
MANU

① **POWER switch**

- This switch does not work when the unit is powered by a DC source. It may therefore be set to either ON or OFF.

② **Power pilot lamp (green)**

- This green LED lights when the POWER switch ① is set to ON.
- It winks if the unit is being powered by an external DC source and the supplied voltage falls below the rating.

③ **CALL button**

- While this button is depressed, the CCU's TALLY/CALL lamp ④ increases its brightness and the TALLY lamp lights at the camera end.
- If the CCU's CALL button is depressed when the CCU adapter is not connected to the CCU, the alarm inside the CCU cabinet sounds.
- If the CCU adapter's CALL button is depressed when the CCU adapter is connected to the CCU and camera's POWER switch is set to OFF, the alarm inside the CCU cabinet sounds.

④ **TALLY/CALL lamp (red)**

- This lights dimly when the POWER switch ① is set to ON. It lights brightly when the CALL button ③ is depressed.
- The lamp's (LED) tally numbers can be selected from 0 to 9 using the internal rotary switch [㊻ on page 1-16.].

⑤ **PGM/INCOM headset double jack**

- If a separate left and right headset (with a double plug) is used, it is possible to hear the program audio and intercom sound simultaneously.
  Top jack: PGM AUDIO reception
  Bottom jack: INCOM reception
- INCOM communication is connected in parallel to the top and bottom jacks. Communication is possible at either end.
- Therefore, when an ordinary single-jack headset is plugged into the bottom jack, INCOM reception and communication are possible and when plugged into the top jack, INCOM communication and PGM reception are possible.

⑥ **INTERCOM selector**

- This is the external INCOM system's ON/OFF switch.
  COMM: The external INCOM system (control console, etc.) and the internal INCOM system (camera and CCU) are connected in parallel. Communication between three individuals is possible.
  PRIV: The external INCOM system is cut off and communication is possible only with the internal INCOM system (camera and CCU).

⑦ **PGM/INCOM headset volume controls**

- These adjust the volume of the double jack ⑤.
- The PGM volume control is used to adjust the PGM AUDIO reception level.
- The INCOM volume control (bottom) is used to adjust the INCOM reception level.

⑧ **GAIN selector**

- This selector serves to control the camera's GAIN switch at the CCU end. When the subject illumination is low, the gain can be increased to +9dB or +18dB.
- When the CCU is connected, this selector takes precedence over the camera's switch.

⑨ **IRIS AUTO/MANU selector**

- When the camera lens IRIS switch has been set to AUTO, the following adjustments can be made with this selector.
  AUTO: The camera lens is set to the AUTO IRIS mode.
  MANU: Iris adjustments (manual) can be performed with the IRIS control ⑩.
- When the lens IRIS switch has been set to MANU, iris adjustments cannot be performed at the CCU end.

⑩ **IRIS control**

- This is used to control the iris with the manual adjustments at the CCU end mentioned above. It allows adjustment from OPEN to CLOSE.

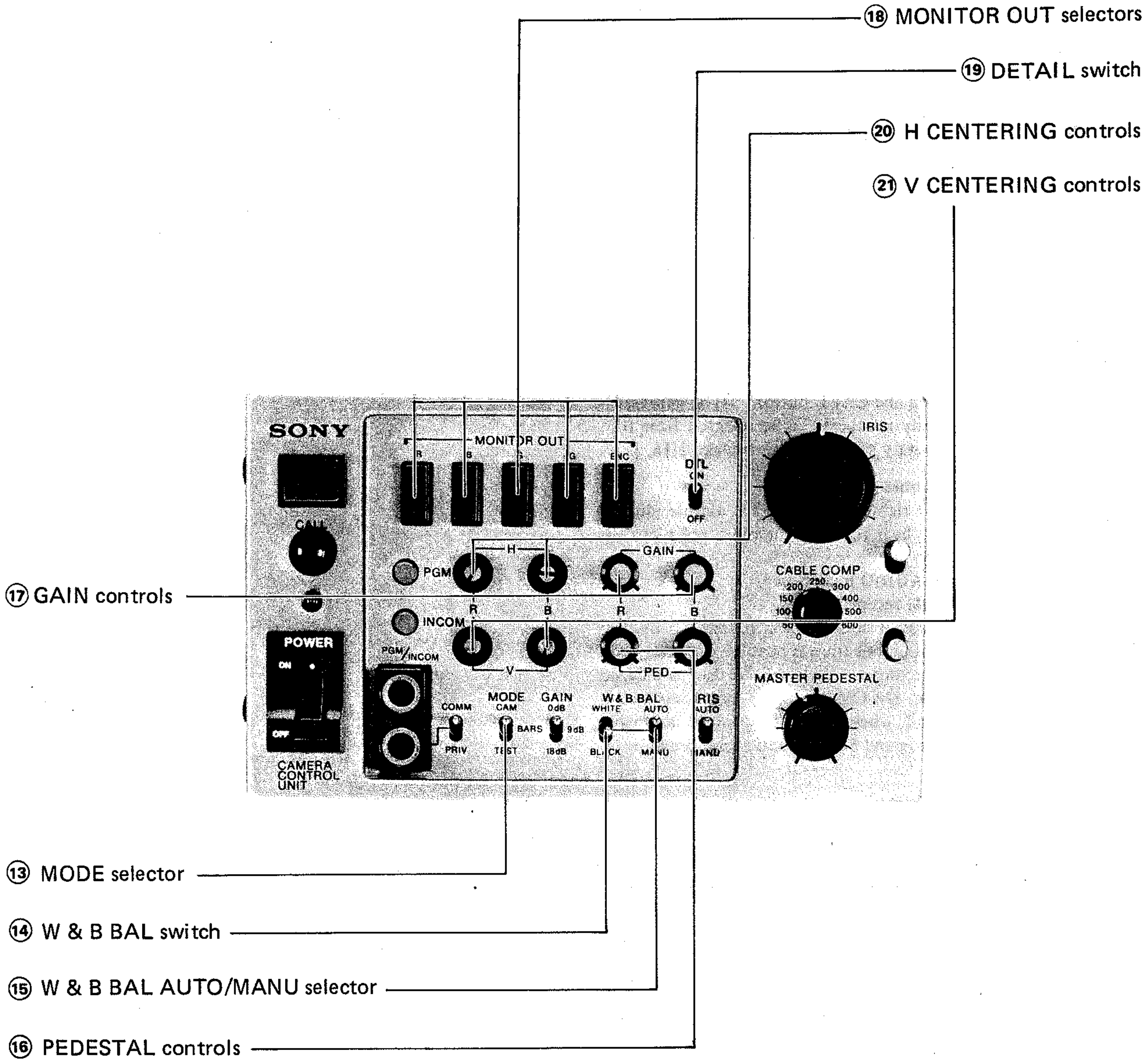
⑪ **CABLE COMP selector**

- This provides cable compensation in line with the length of the camera cable. It is adjusted so that proper compensation is provided for a 25-meter cable at the [0] m position.

⑫ **MASTER PEDESTAL control**

- This is used to adjust the master pedestal at the CCU end.
- It is connected in parallel with the PED control (master pedestal) at the camera end. Both controls can provide adjustment.

Controls


⑱ MONITOR OUT selectors
⑲ DETAIL switch
⑳ H CENTERING controls
㉑ V CENTERING controls
⑰ GAIN controls
⑬ MODE selector
⑭ W & B BAL switch
⑮ W & B BAL AUTO/MANU selector
⑯ PEDESTAL controls
SONY
CALL
POWER
ON
OFF
CAMERA CONTROL UNIT
MONITOR OUT
DTL
ON
OFF
PGM
INCOM
PGM/INCOM
H
V
GAIN
PED
R
B
COMM
PRIV
MODE
CAM
BARS
TEST
GAIN
0dB
9dB
18dB
W & B BAL
WHITE
BLACK
AUTO
MANU
IRIS
AUTO
HAND
CABLE COMP
MASTER PEDESTAL

⑬ MODE selector

- This serves to operate the camera's OUTPUT selector (CAM/BARS) on the side panel or the TEST switch built into the camera at the CCU end.

CAM:	The ordinary camera (pickup tube) output signals are provided as CCU output signal.
BARS:	The color bar signals inside the camera are provided as the CCU output signal.
TEST:	The test signal inside the camera is provided as the CCU output signal.

- When the CCU is connected, the CCU end takes precedence over the camera end.
- When the MODE selector is set to TEST, the lens iris automatically closes and the pickup tube is protected.

⑭ W & B BAL switch

- When the AUTO/MANU selector ⑮ has been set to AUTO, this switch can be used to attain the camera's auto white balance and auto black balance.
- When this switch is set to the WHITE (or BLACK) position and kept there for about 2 seconds, the white (or black) balance is attained. For the completion of the adjustment, check that the camera's REC/WB lamp lights or monitor the waveforms. Operate in the sequence of WHITE → BLACK → WHITE.

⑮ W & B BAL AUTO/MANU selector

AUTO:	Set to this position when attaining the auto white and black balance.
MANU:	Set to this position for performing the rough adjustments of the PED controls ⑯ and GAIN control ⑰ .

- When this selector is set to AUTO, the pedestal and gain can be adjusted finely although the range of variation is reduced to about one-fourth.

⑯ PEDESTAL controls

- By rotating the R and B controls, the red and blue pedestal levels can be adjusted separately.
- Rough and fine adjustments are possible at the selector ⑮ positions described above.

⑰ GAIN controls

- By rotating the R and B controls, the red and blue gain levels can be adjusted separately.
- Rough and fine adjustments are possible at the selector ⑮ positions described above.

⑱ MONITOR OUT selectors

- These serve to select the output signals at the MONITOR OUT connector ㉖ (see page 1-14) in order to adjust the camera's registration.

ENC:	For providing the encoder's output signal.
R, B, G, –G:	By depressing a multiple number of these buttons, it is possible to provide composite signals.
[Example]	R and –G = R–G signal B and –G = B–G signal R, B and G = R+B+G signal

- These buttons are self-illuminating. The built-in LED lights when the button is depressed.
- The R, B, G and ENC buttons are coupled. When the R, B and G buttons are depressed simultaneously, they are all set to the ON mode.
- The –G button is independent. However, if the ENC button is depressed when the –G button has already been depressed, the –G button is electrically cut off and the LED goes out.

⑲ DETAIL switch

This switch sets the camera's built-in contour correction circuit to ON or OFF at the CCU end. If it is set to OFF when the above registration adjustment is performed and contour correction signal is cut off and the registration adjustment is facilitated.

⑳ H CENTERING controls

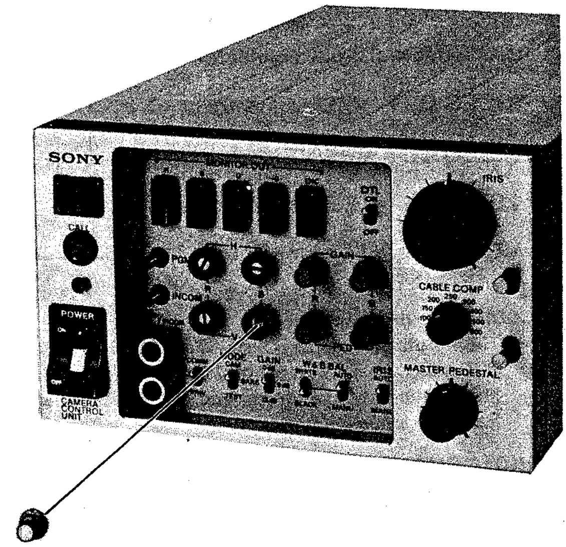
- These are used to correct the deviation in the horizontal registration at the CCU end. Adjustment is independent for R and B.
- They are connected in parallel with the camera's CENTERING controls. Both sets of controls can be adjusted.

㉑ V CENTERING controls

- These are used to correct the deviation in the vertical registration at the CCU end. Adjustment is independent for R and B.
- They are connected in parallel with the camera's CENTERING controls. Both sets of controls can be adjusted.

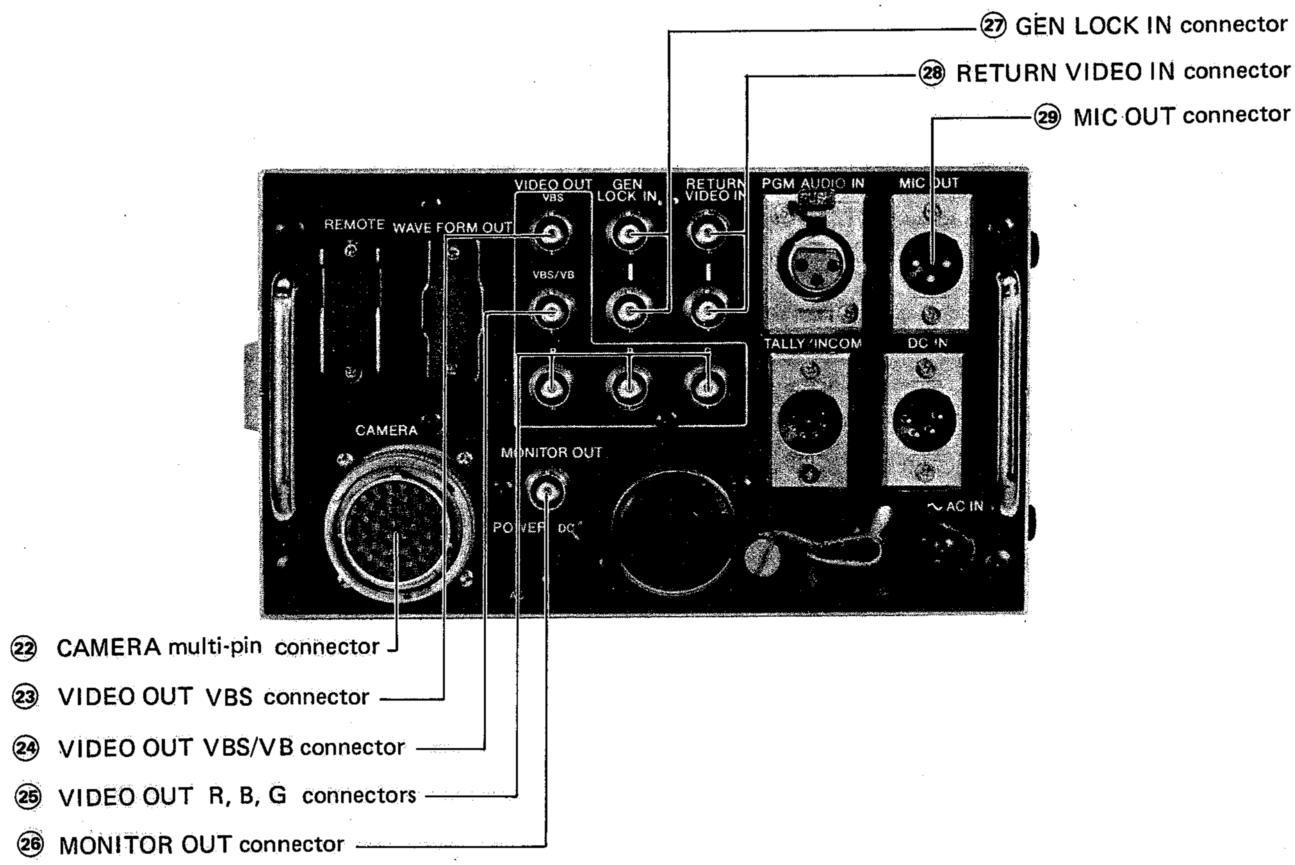
Centering controls

The centering controls are not provided with knobs. To attach knobs, pull out the guards and then mount the accessory knobs.



REAR PANEL

Main Input/Output Connectors


㉗ GEN LOCK IN connector
㉘ RETURN VIDEO IN connector
㉙ MIC OUT connector
VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER
AC IN
㉒ CAMERA multi-pin connector
㉓ VIDEO OUT VBS connector
㉔ VIDEO OUT VBS/VB connector
㉕ VIDEO OUT R, B, G connectors
㉖ MONITOR OUT connector

㉒ CAMERA multi-pin connector

- This 41-pin connector is used to couple the camera with the CCU using the CCW cable (optional).
- Plug in the cable connector and to secure, rotate the coupling ring counterclockwise.

㉓ VIDEO OUT VBS connector

The encoded output signal, which has been to tally compensated for by the CCU, is fed out at this BNC connector.

㉔ VIDEO OUT VBS/VB connector

- The same camera output signal as that given above is fed out to this BNC connector.
- The internal switch (㊳ on page 1-16) can be used to supply the VBS or VB output signal.
- Compared with the VBS signal, the VB signal is delayed by about 300 nsec.

㉕ VIDEO OUT R, B, G connectors

- R, B and G output signals, which have been independently compensated for by the CCU, are fed out through these BNC connectors.
- They serve as chroma key output connectors.
- Compared with the VBS output signal, these signals are advanced by about 800 nsec.

㉖ MONITOR OUT connector

- The output signal selected by the MONITOR OUT selector (⑱ on page 1-12) is fed out through this BNC connector.
- The output signal is used for registration adjustment and camera monitoring.

㉗ GEN LOCK IN connectors

- These BNC connectors are for the reference black burst (or VBS) signal which is supplied to the CCU for camera gen-lock.
- When a reference signal is not fed into these connectors, the camera is automatically set to the internal sync mode.
- There are two connectors, top and bottom, in a "through" configuration. Therefore, when one only is used, attach a 75-ohm terminator to the other.

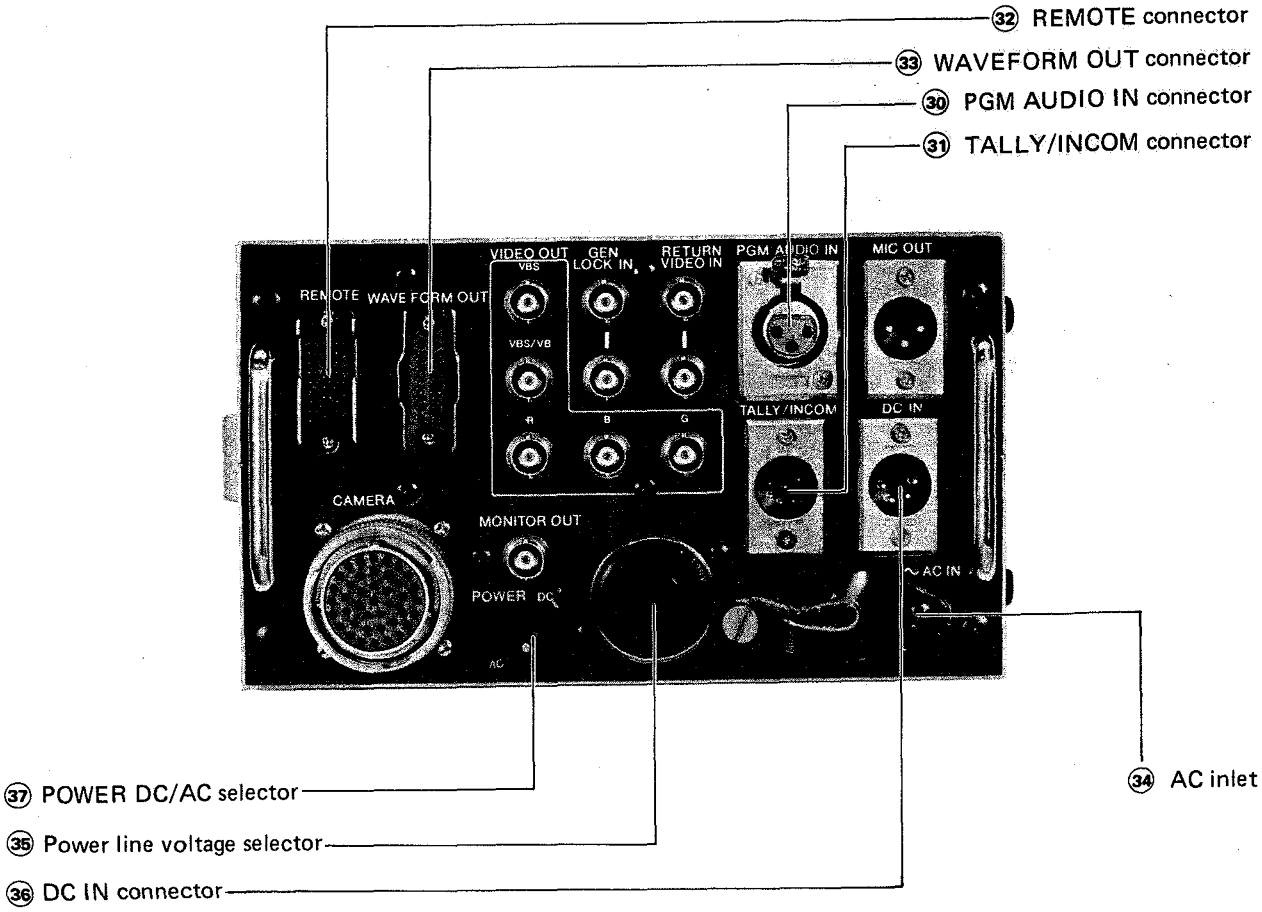
㉘ RETURN VIDEO IN connectors

- These BNC input connectors are for the return video signals which are returned from the control console or VTR to the camera end.
- There are two connectors, top and bottom, in a "through" configuration. Therefore, when one only is used, attach a 75-ohm terminator to the other.

㉙ MIC OUT connector

- This XLR-3 pin connector amplifies the camera microphone output and sends it to the following stage (see audio system diagram on page 1-8).
- A 0 dB or –20 dB output level can be selected with the internal switch (㊴ on page 1-16).

Power, Auxiliary Connectors


㉜ REMOTE connector
㉝ WAVEFORM OUT connector
㉚ PGM AUDIO IN connector
㉛ TALLY/INCOM connector
VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
AC
~AC IN
㊲ POWER DC/AC selector
㉟ Power line voltage selector
㊱ DC IN connector
㉞ AC inlet

㉚ **PGM AUDIO IN connector**
This XLR-3 pin connector is used to supply the program audio signals to the double jack (⑤on page 1-10).

㉛ **TALLY/INCOM connector**
- This XLR-7 pin connector is for connecting the TALLY/INCOM signal to the external unit (switcher).
- Refer to page 1-8 for the connections figure and PGM AUDIO/INCOM system diagram.

㉜ **REMOTE connector**
- This 24-pin connector is for the operation panel. See page 1-9 for the connections figure.
- Use the switch (㊺ on page 1-16) at the side of the printed wiring board to select the REMOTE or LOCAL mode.
- Make sure that the ±9 V power output signals are not more than 50 mA.

㉝ **WAVEFORM OUT connector**
- This 16-pin connector supplies the power and the various signals required to monitor the waveforms on a waveform monitor.
- Refer to page 1-9 for the connections figure.

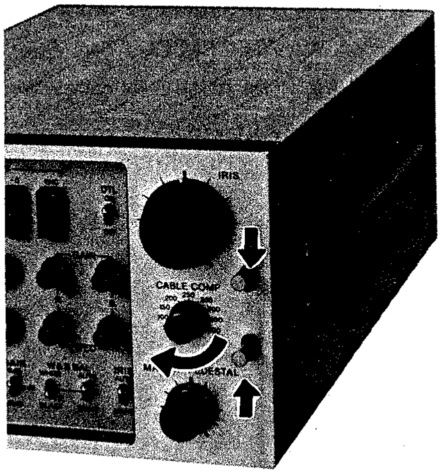
㉞ **AC inlet**
When the CCU is being driven by AC power, plug the power cord (accessory) into this inlet and then secure using the plug strap.

㉟ **Power line voltage selector**
- Set this to the value corresponding to the power line voltage in the area of use.
- If it is set to the wrong position, the CCU will not work properly and if a high voltage is supplied in error, the regulator inside will be damaged.

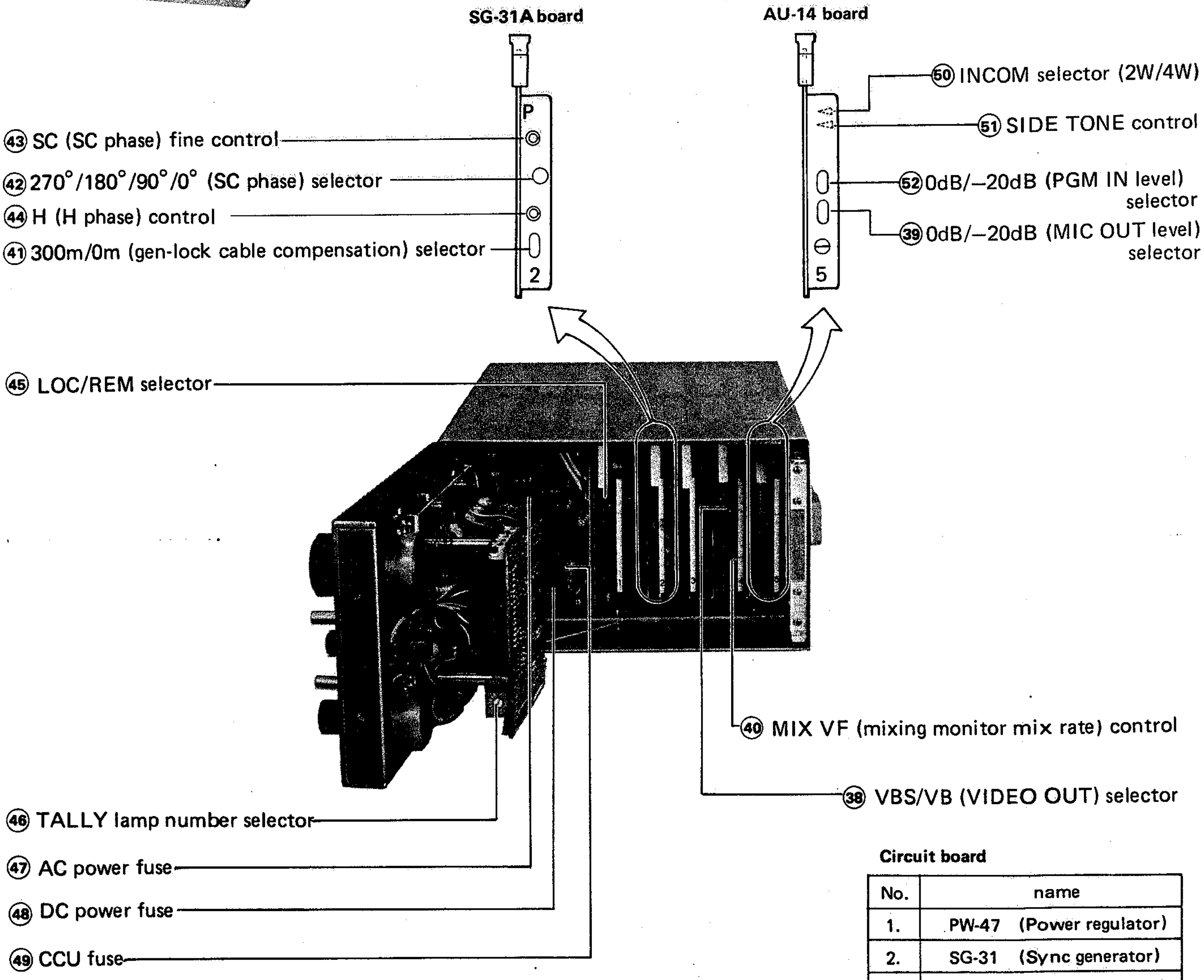
㊱ **DC IN connector**
- This DC input connector is used for driving the CCU by DC power. Pin 1 on this XLR-4 pin connector is GND; pin 4 is + power supply.
- A power input of 12 – 17 V is required for supplying power from the CCU to the camera and 10.5 – 17 V is necessary when no power is supplied from the CCU to the camera.

㊲ **POWER DC/AC selector**
- This switch selects either DC or AC power operation.
- When the CCU is being driven by DC power, this selector can also function as the power switch. Power is supplied at ON and cut off at AC. (This applies only when AC power is not being supplied.)

INTERNAL CONTROLS


IRIS
CABLE COMP
PEDESTAL

Depress the levers indicated by the arrows up or down and open the front panel.
(To close the panel, follow the reverse procedure.)


SG-31A board
AU-14 board
P
2
5
㊿ INCOM selector (2W/4W)
(51) SIDE TONE control
(52) 0dB/–20dB (PGM IN level) selector
㊴ 0dB/–20dB (MIC OUT level) selector
㊸ SC (SC phase) fine control
㊷ 270°/180°/90°/0° (SC phase) selector
㊹ H (H phase) control
㊶ 300m/0m (gen-lock cable compensation) selector
㊺ LOC/REM selector
㊵ MIX VF (mixing monitor mix rate) control
㊳ VBS/VB (VIDEO OUT) selector
㊻ TALLY lamp number selector
㊼ AC power fuse
㊽ DC power fuse
㊾ CCU fuse

Circuit board

No.	name
1.	PW-47 (Power regulator)
2.	SG-31 (Sync generator)
3.	VA-5 (Video amplifier)
4.	VA-6 (Video amplifier)
5.	AU-14 (Audio amplifier)

㊳ **VBS/VB (VIDEO OUT) selector**
This is used to set the signal which is fed out at the VIDEO OUT connector (㉔ on page 1-14) to VB or VBS.

㊴ **0 dB/–20 dB (MIC OUT level) selector**
This is used to set the level of the signal which is fed out to the MIC OUT connector ㉙ to 0 dB or –20 dB.

㊵ **MIX VF (mixing monitor mix rate) control**
This is used to adjust the mix rate of the camera's output signal and the return video signal which is sent to the camera's viewfinder.

㊶ **300m/0m (gen-lock cable compensation) selector**
This is for the cable (3C-2V) compensation of the gen-lock reference signal supplied from the GEN LOCK IN connector (㉗ on page 1-14.)

0 m: Cable length of 0 – 150 m
300 m: Cable length of 150 – 450 m

㊷ **270°/180°/90°/0° (SC phase) selector**
This rotary switch is used to adjust the subcarrier phase difference between the gen-lock reference signal and output signal. It can be set to any of 4 stages at 90° intervals.

㊸ **SC (SC phase) fine control**
This is used to adjust the subcarrier phase difference between the gen-lock reference signal and output signal. After rough adjustment with selector ㊷ , operate this control. The range of variation is 90°.

㊹ **H (H phase) control**
This is used to adjust the H phase difference of the gen-lock reference signal and output signal. Its range of variation is +3 μsec to –1.5μsec or more.

㊺ **LOC/REM selector**
This switches the main control operations of the front panel over to the operation panel.

LOC: When controlling at the CCU end (local).
(During normal use)
REM: When controlling at the operation panel (remote).

㊻ **TALLY lamp number selector**
This rotary switch is used to select the numbers (0 – 9) indicated by the TALLY/CALL lamp (④on page 1-10). Do not use the alphabet position for normal operation.

㊼ **AC power fuse**
This fuse is inserted in the AC power line which has entered from the AC inlet ㉞ . (4A fuse)

㊽ **DC power fuse**
This fuse is inserted in the DC power line which has entered from the DC IN connector ㊱ . (2A fuse) The DC power sent from the CCU to the camera does not go via this fuse but is sent directly.

㊾ **CCU fuse**
This fuse is inserted in the unregulated (12 V) power line from the switching regulator. (2A fuse)

㊿ **INCOM selector (2W/4W)**
Pull out the NO. 5 circuit board (AU-14 board). The selector is located on the board. This switch is used to select between a 2-wire and a 4-wire INCOM system.

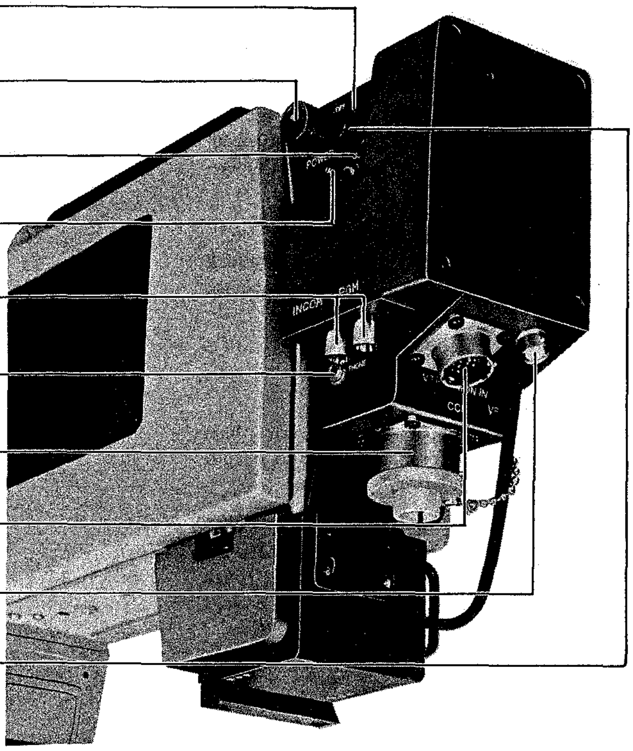
(51) **SIDE TONE control**
With a 2-wire INCOM system, this control adjusts the volume of the side tone*. Normally, adjust this control so that the side tone is at the lowest volume possible.

* Side tone: your own voice heard through the headset when intercommunicating.

(52) **0dB/–20dB (PGM IN level) selector**
Set the switch in accordance with the input signal level from the PGM AUDIO IN connector ㉚ .

0dB: Set to this position when the input level is 0dB.
–20dB: Set to this position when the input level is –20dB.

CCU ADAPTER


POWER
INCOM
PGM
PHONE
CCU
VF

② CALL button

① Camera POWER switch

③ PGM AUDIO volume control

④ INCOM volume control

⑤ PGM/INCOM headset double jack

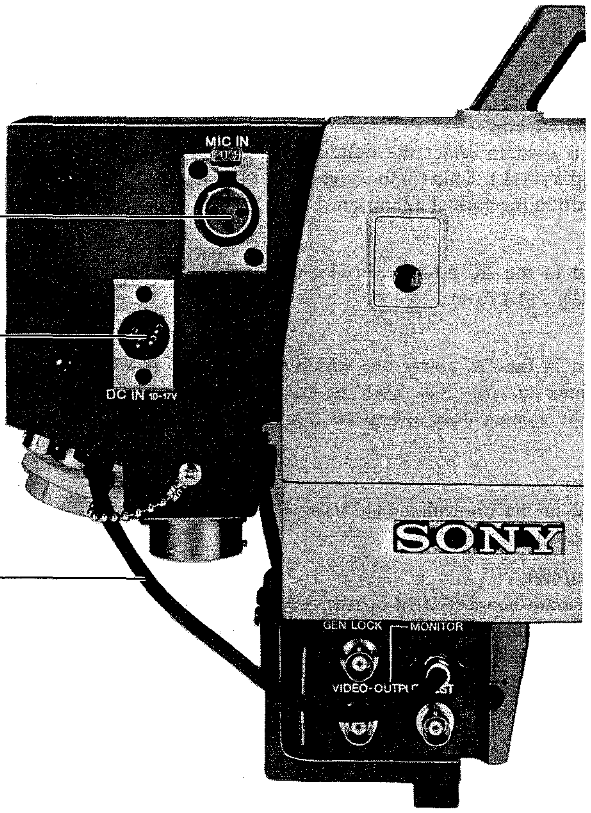
⑥ PHONE (earphone) jack

⑦ CCU multi-pin connector

⑧ VTR multi-pin connector

⑨ VF DC OUT connector

⑩ Camera power fuse


MIC IN
DC IN 10-17V
SONY
GEN LOCK
MONITOR
VIDEO-OUTPUT

⑪ MIC IN connector

⑫ Camera DC IN connector

⑬ MONITOR OUT cable

① **Camera POWER switch**
This is the camera's POWER switch (same as conventional BVP-300).

② **CALL button**
This is for calling out the CCU end. When depressed, the TALLY/CALL lamp (④on page 1-10) at the CCU end lights brightly.

③ **PGM AUDIO volume control**
This adjusts the PGM AUDIO reception level of the double jack ⑤ signals.

④ **INCOM volume control**
This adjusts the INCOM reception level of the double jack ⑤ signals.

⑤ **PGM/INCOM headset double jack**
The headset is plugged into this double jack. It is used in the same way as the CCU's double jack (⑤on page 1-10).

⑥ **PHONE (earphone) jack**
When an earphone is plugged into this jack, it is possible to monitor the sound which is returned from the VTR. (Minijack, 8 ohms)

⑦ **CCU multi-pin connector**
This 41-pin connector is for coupling the CCU to the camera. Connect to the CCU with the CCW cable (optional).

⑧ **VTR multi-pin connector**
This 14-pin connector is for when the camera is used in combination with a portable VTR (14-pin). Connect with the CCQ cable (optional). (See page 1-5 for an example of the connections.)

⑨ **VF DC OUT connector**
This output connector is for supplying power to the BVF-5 (optional) 5-inch viewfinder.

⑩ **Camera power fuse**
This fuse is inserted in the power line supplied to the camera. (4A micro fuse)

⑪ **MIC IN connector**
The output from the camera microphone is connected to this XLR-3 pin connector.

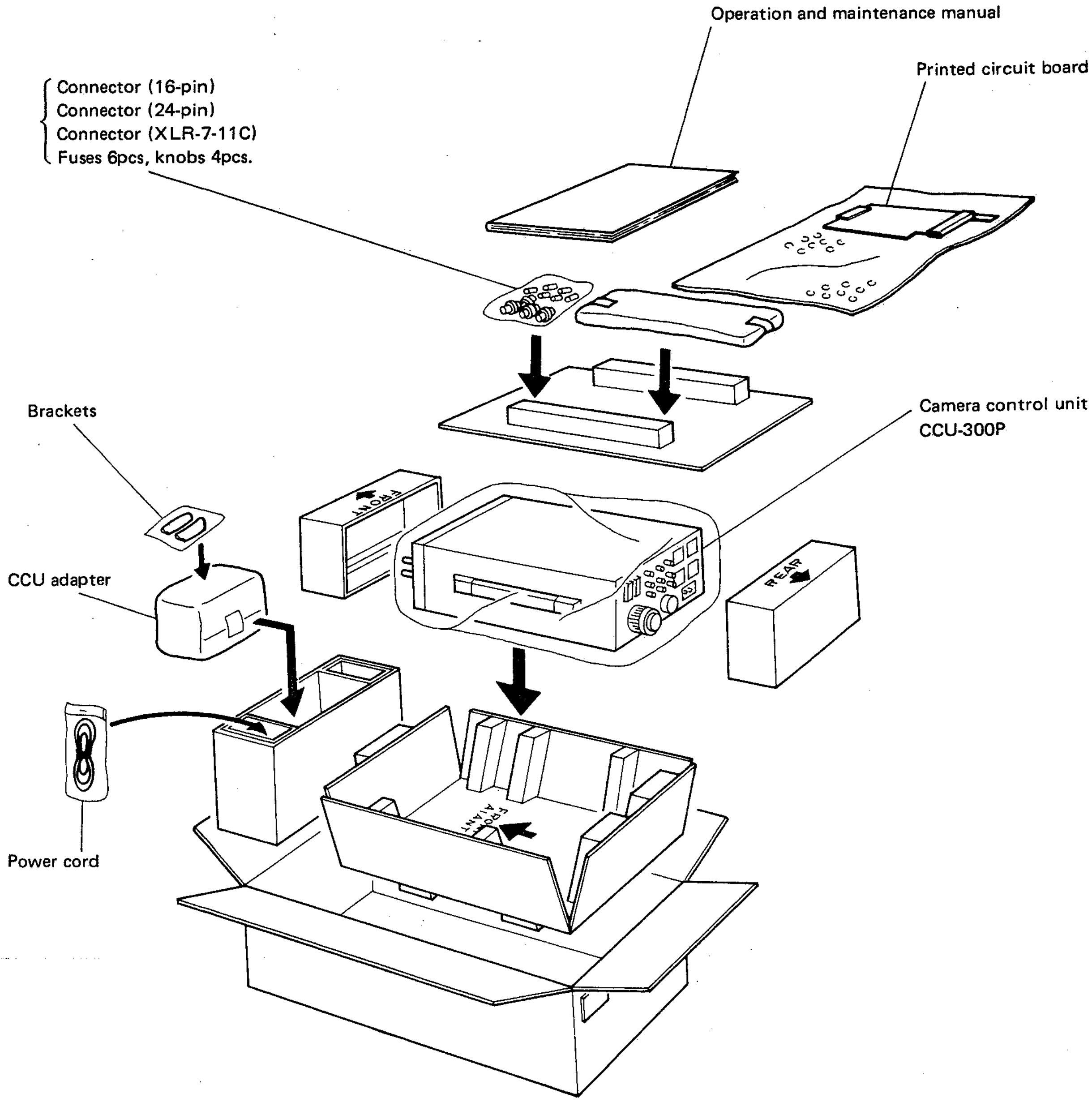
⑫ **Camera DC IN connector**
Connect the DCC-300 battery case (optional) to this connector when powering the camera with a separate power supply.

⑬ **MONITOR OUT cable**
Connect this to the MONITOR connector on the camera.

OPERATING CAUTIONS

1. **Do not attach or detach** the CCW cable connector with the CCU in the power ON mode.
2. **Before operation**, set the CCU controls to their center positions and complete the adjustment of the camera's centering, gain and pedestal.
3. When using the camera 41-pin connector, place a cap over the 14-pin connector. Conversely, when using the 14-pin connector, place a cap over the 41-pin connector.
4. The PW-47 board (page 1-16) is provided with a high-voltage transformer (600 V). When drawing it out, therefore, do not touch the printed circuit board since this may result in a **dangerous electric shock.**

PACKING


Operation and maintenance manual
Printed circuit board
Connector (16-pin)
Connector (24-pin)
Connector (XLR-7-11C)
Fuses 6pcs, knobs 4pcs.
Brackets
Camera control unit
CCU-300P
CCU adapter
FRONT
REAR
FRONT
AVANT
Power cord

ABSCHNITT 1
BEDIENUNG

Die CCU-300P ist eine Kamera-Steuer- und Regeleinheit zum Gebrauch in Verbindung mit den Sony Farbkameras BVP-300P. Sie bietet eine Vielzahl von Fernsteuer- und Regelfunktionen, die sich sowohl für die elektronische Berichterstattung als auch bei der Programmproduktion im Studio als praktisch erweisen.

KOMPATIBLE KAMERA

Abhängig von der Seriennummer der Kameraserie BVP-300P kann es vorkommen, daß einige der Funktionen der CCU-300P Serie nicht störungsfrei arbeiten.

Modell	Gebiet	verwendbare Seriennummer
BVP-300P	PAL-Gebiete	Nr. 10101 und darüber

Wenn die Seriennummer der Kamera unter der in der obigen Tabelle angegebenen liegt, ist ein Umbau erforderlich. Wenden Sie sich in solchen Fällen bitte an Ihren Sony Händler.

MERKMALE

Kompakt Außenabmessungen und leichtes Gewicht
Für größtmögliche Erleichterung der Bedienbarkeit bei Aufnahmen im Freien ist die Einheit kompakt und leicht konstruiert worden. Sämtliche Bedienungs- und Einstellfunktionen sind in einem Gehäuse zusammengefaßt worden.

AC/DC 2-Weg-Stromversorgung
Das Stromversorgungsteil arbeitet mit einem kompakten und hocheffizienten Schaltregler. Die Einheit kann mit Netzspannung (90–130V, 200–260V) oder auch mit Gleichspannung (12–17V) versorgt werden.

Maximale Kabellänge von 600m
Wenn die Kamera einen 1,5-Zoll-Sucher oder eine eigene Stromversorgung hat, kann das Kamerakabel (CCW-Kabel) bis auf 600 Meter verlängert werden. Eine maximale Verlängerung bis auf 300 Meter ist möglich, wenn die Kamera mit dem gesondert lieferbaren 5-Zoll-Sucher BVF-5 arbeitet (mit Kabelkompensation). Mit dem 14-Stift CCQ-Kabel ist der Anschluß eines tragbaren Videorecorders möglich (BVU-50PS oder BVH-500P).

Taktsynchronisierungsfunktion
Zusätzlich zu intern erzeugten Synchronsignalen ist Taktsynchronisierung mit externen Synchronsignalen möglich. Es ist außerdem möglich, die Horizontalphase und die Hilfsträgerphase der externen Signale zur Taktsynchronisierung einzuregeln.

Mehrfachsystem-Ausgänge
Es kann eine Vielfalt von Ausgangssignalen geliefert werden: VBS-Kameraausgang, Kameraausgang zur Wahl zwischen VBS und VB, kabelkompensierter getasteter Farbausgang (R, G, B), Signalausgang zur Einstellung der Registrierhaltigkeit und anderen Kontrollzwecken und ein Ausgang zur Wellenformüberwachung (R, G, B, Encoder, Sync, Austastung).

Mischmonitor
Diese Funktion erlaubt das Mischen der Ausgangssignale von der Kamera mit den Rücklaufvideosignalen und die Überwachung der zur Kamera zurückgeleiteten gemischten Signale. (Das Mischverhältnis ist einstellbar.)

Doppelbuchse für Kopfhörer mit Mikrofon
Es kann ein Mikrofon-Kopfhörer mit Doppelstecker verwendet werden, so daß gleichzeitiges Mithören von Programm und Gegensprechverkehr möglich ist. (Ein Mikrofon-Kopfhörer mit Einfachstecker kann ebenfalls angeschlossen werden.)

Schutz vor Fehlbedienung
Die Regler auf der Frontplatte liegen tiefer als die Schalter, was einen Schutz vor Fehlbedienungen bietet und besonders bei Direktübertragungen ein wertvolles Merkmal darstellt. Ferner ist das Netzkabel mit einem Band versehen, damit es sich nicht lockern und Störungen der Stromversorgung verursachen kann.

Leichte Wartung und Inspektion
Die Frontplatte ist so konstruiert, daß mit einem Fingerdruck geöffnet werden kann. Selbst bei Gestellmontage der Einheit sind Inspektionen und Einstellungen im Geräteinneren leicht auszuführen.

ZUR BEACHTUNG BEI DER INSTALLATION

Aufstellort

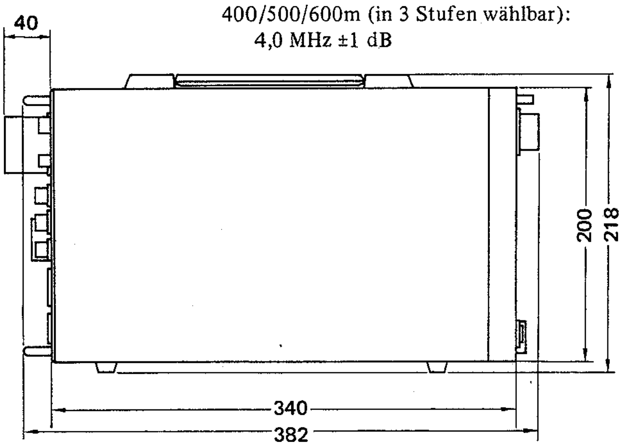
- Die Einheit an einem Ort aufstellen, der so trocken und gut belüftet wie möglich ist.
- Die Einheit nicht in der Nähe von Wärmequellen und in Räumen mit hoher Temperatur aufstellen.
- Von Orten fernhalten, die Staub und viel Vibrationen ausgesetzt sind.
- Nicht in die Nähe von starken elektrischen und magnetischen Feldern bringen.
- Nicht direkter Sonneneinstrahlung und starker elektrischer Beleuchtung und Blitzen aussetzen.

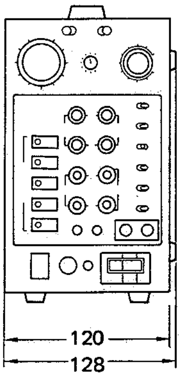
Gestellmontage

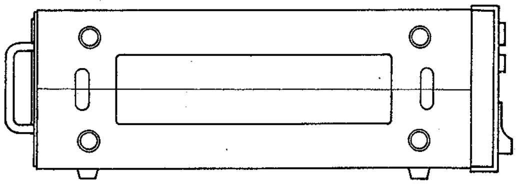
- Bei Gebrauch der gesondert lieferbaren Gestellmontagewinkel RMM-301 können zwei Einheiten nebeneinander in ein EIA-Standardgestell eingebaut werden.
- Die Geräte so einbauen, daß sie sich nicht über einem Netzteil oder einer anderen wärmeabgebenden Einheit befinden.

TECHNISCHE DATEN

Stromversorgung	Wechselspannung 100V ±10%, 120V ±10% 220V ±10%, 240V ±10% (wählbar) 50/60 Hz Gleichspannung 10,5–17V
Leistungsaufnahme	Wechselspannung 85W Gleichspannung 49W
Ausgangssignale	VIDEO OUT 1,0 Vs-s, VBS, 75 Ohm (BNC-Typ x 1) 1,0 Vs-s, VBS/VB wählbar, 75 Ohm (BNC-Typ x 1) R, G, B OUT (BNC-Typ x 3) 0,7 Vs-s, V, 75 Ohm MONITOR OUT (BNC-Typ x 1) R, G, B, –G Signale oder Encoder-Ausgangssignal 1,0 Vs-s, VS/VBS, 75 Ohm WAVEFORM OUT (16-Stift-Anschluß) ENCODER OUT: 1,0 Vs-s, VBS, hochohmig R OUT: 0,7 Vs-s, V, 75 Ohm G OUT: 0,7 Vs-s, V, 75 Ohm B OUT: 0,7 Vs-s, V, 75 Ohm SYNC OUT: 3,5 Vs-s, hochohmig BLANKING OUT: 5,0 Vs-s, hochohmig DC OUT: 10,5–17V GND MIC OUT (XLR-3-31) 0 dB/–20 dB (wählbar) Impedanz 600 Ohm
Kamera-Steuerfunktionen	Blende (Auto/Manual) Weißabgleich (Auto/Manual) Schwarzabgleich (Auto/Manual) Empfindlichkeit (R/B) Schwarzwertpegel (Gesamt/R/B) Zentrierung (R/B horizontal, R/B vertikal) Empfindlichkeitswahl (0 dB/+9 dB/+18 dB) Kameraausgang (Kamera/Farbbalken/Test) Sprechverkehrumschaltung (COMM/PRIV) Phase (H/SC) Kabelkompensation Signal/Ruf
Kabelkompensation	0 (25m)/50/100/150/200/250/300m (in 7 Stufen wählbar): 5,5 MHz ±0,5 dB 400/500/600m (in 3 Stufen wählbar): 4,0 MHz ±1 dB
Taktsynchronisierung	Einstellbereich der Horizontalphase: +3 µsec bis –1,5 µsec oder mehr (in Bezug auf die Eingangsphase) Einstellbereich der SC-Phase: 360° Koppelgenauigkeit: H: innerhalb ±0,01 µsec SC: innerhalb ±1°
Blendensteuerung	geschlossen ←→ offen, Auto/Manual wählbar
Gesamtschwarzwerteinstellung	mehr als ±30% des Nennwertes
R/B-Empfindlichkeitseinstellung	mehr als ±20% des Nennwertes
R/B-Schwarzwerteinstellung	mehr als ±20% des Nennwertes
Zentrierungseinstellung	mehr als ±1% des Nennwertes
Signal/Ruf	Kontakt und Stromversorgung (Gleichspannung 12V/24V)
Sprechverkehr	INPUT: –16 dBm, 600 Ohm, symmetrisch (XLR-7-32) OUTPUT: 0 dBm, 600 Ohm, symmetrisch
Programm Audio-In	0 dBm/–20 dBm, 600 Ohm, symmetrisch (XLR-3-31)
Fernbedienung	Direkt/Fernbedient
Zul. Umgebungstemperatur bei Betrieb	–10° bis +45° (CCU und CCU-Adapter)
Abmessungen	CCU: 218(B) x 128(H) x 382(T) mm CCU-Adapter: 77(B) x 146,5(H) x 104(T) mm
Gewicht	CCU: 6,5 kg CCU-Adapter: 0,7 kg
Mitgeliefertes Zubehör	Netzkabel x 1 Einstellknopf x 4 Netzstromsicherung (4A) x 2 Gleichstromsicherung (2A) x 2 Gleichstrom-Mikrosicherung (4A) x 2 Verlängerungsplatte x 1 Montageplatte A x 1 Montageplatte B x 1 Befestigungsschraube des CCU-Adapters x 2 Schraube (⊕ B 4 x 8) x 4 Schraube (⊕ B 3 x 16) x 2 Schraube (⊕ B 4 x 16) x 2 16-Pol-Anschluß 24-Pol-Anschluß XLR-7-11C Anschluß
Sonderzubehör	Kamerakabel (41-Stift, 34-Ader) CCW-25 (25m), CCW-50 (50m), CCW-100 (100m) Gestellmontagewinkel (RMM-301)

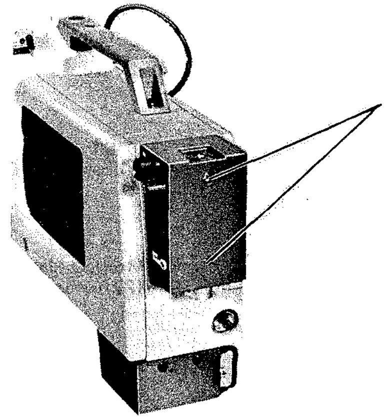






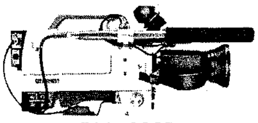
MONTAGE DES CCU-ADAPTERS AN DER KAMERA

Montieren Sie bei Verwendung der CCU-300P den CCU-Adapter an der Rückwand der Kamera.
Zuerst nehmen Sie die Anschlußbox von der Kamerarückwand ab.



Die beiden Innensechskantschrauben (4 x 30) herausschrauben.
(Eine L-förmigen 4-mm-Sechskantschlüssel benutzen.)

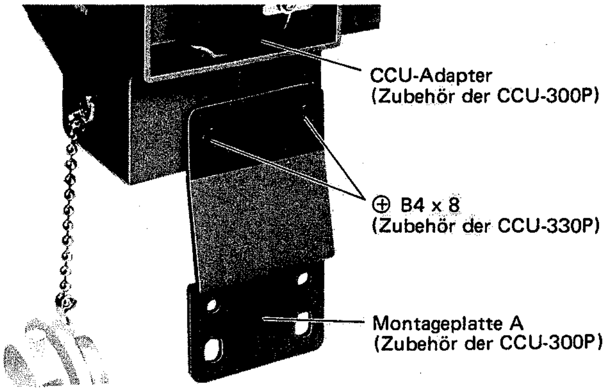
Verwenden Sie die Fixierplatte und/oder Montageplatte A oder B entsprechend der Kamera. Siehe folgende Tabelle:

Modell	BVP-300P	BVP-300P oder BVP-300AP		BVP-300AP oder BVP-330P
		Kamera, an der die Fixierplatte angebracht ist.	Kamera, an der die Fixierplatte nicht angebracht ist.	 BVP-330P
Bei Benutzung des Stativaufsatzes VCT-300	Fixierplatte Montageplatte A	Montageplatte A	Fixierplatte Montageplatte A	Montageplatte B
Bei Nichtbenutzung des Stativaufsatzes VCT-300	Montageplatte B	Montageplatte A	Montageplatte B	Montageplatte B

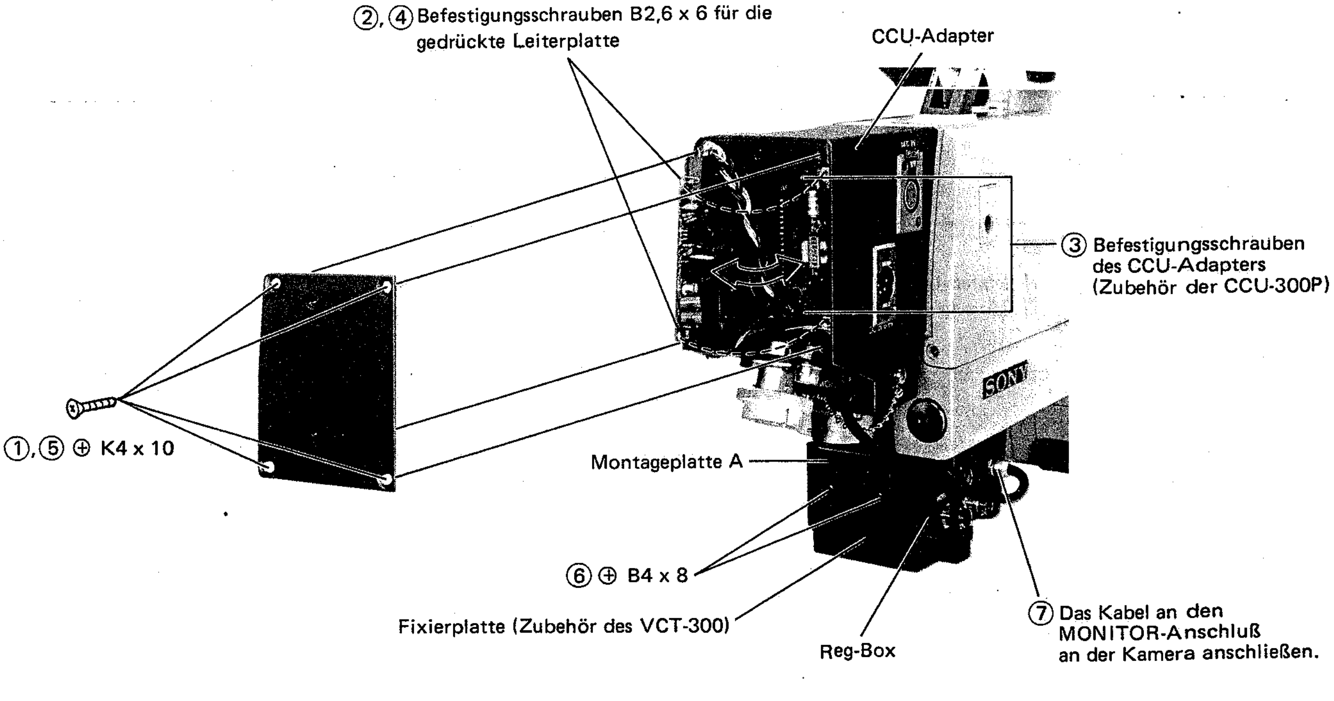
Genauere Information zum Anbringen der Fixierplatte können Sie in der Bedienungs- und Wartungsanleitung des Stativaufsatzes VCT-300 nachlesen.

Montage des CCU-Adapters bei Verwendung der Montageplatte A

1. Die Montageplatte A am CCU-Adapter anbringen.

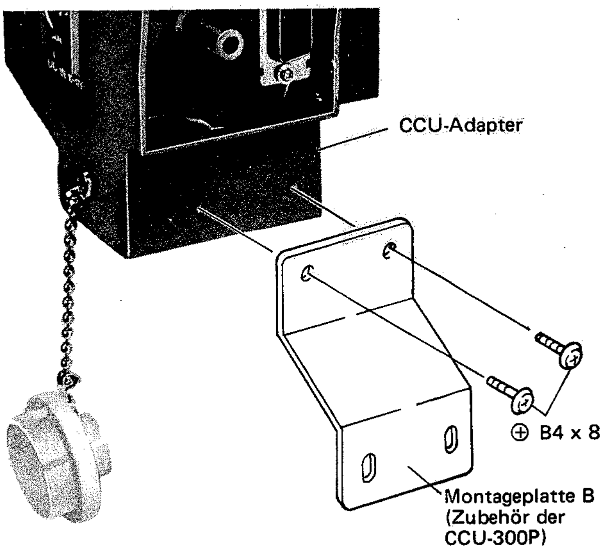

CCU-Adapter
(Zubehör der CCU-300P)
⊕ B4 x 8
(Zubehör der CCU-330P)
Montageplatte A
(Zubehör der CCU-300P)

2. Den CCU-Adapter an die Kamera montieren.
   Abnehmen: ①,②
   Anbrigen: ③,④,⑤,⑥,⑦


②, ④ Befestigungsschrauben B2,6 x 6 für die gedrückte Leiterplatte
CCU-Adapter
③ Befestigungsschrauben des CCU-Adapters (Zubehör der CCU-300P)
SONY
①,⑤ ⊕ K4 x 10
Montageplatte A
⑥ ⊕ B4 x 8
Fixierplatte (Zubehör des VCT-300)
Reg-Box
⑦ Das Kabel an den MONITOR-Anschluß an der Kamera anschließen.

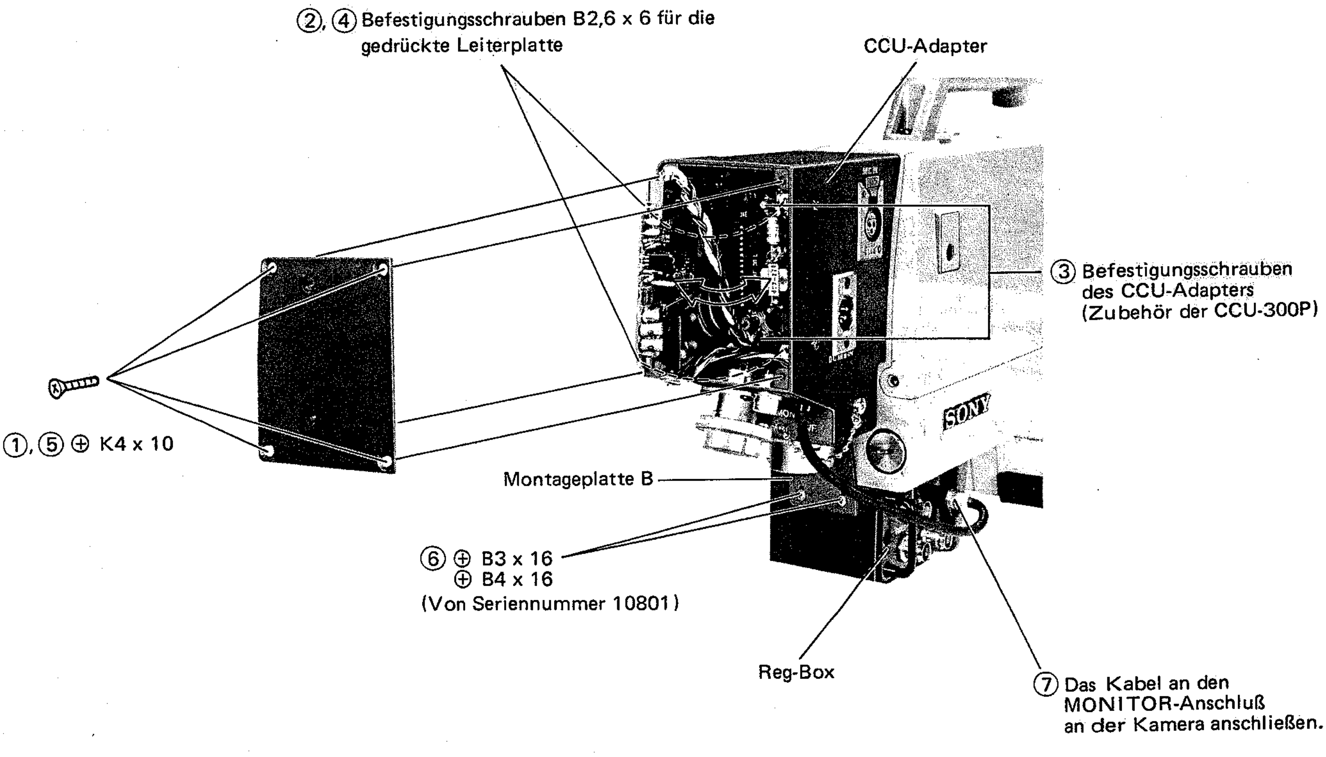
Montage des CCU-Adapters bei Verwendung der Montageplatte B

1. Die Montageplatte B am CCU-Adapter anbringen.



CCU-Adapter
⊕ B4 x 8
Montageplatte B (Zubehör der CCU-300P)

2. Den CCU-Adapter an die Kamera montieren.
   Abnehmen: ①,②
   Anbrigen: ③,④,⑤,⑥,⑦

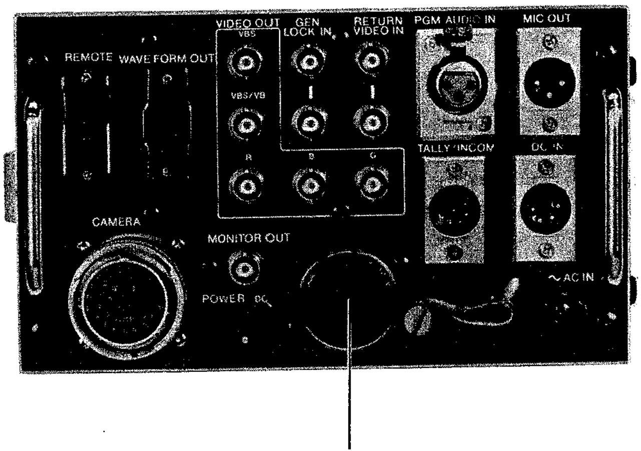


②, ④ Befestigungsschrauben B2,6 x 6 für die gedrückte Leiterplatte
CCU-Adapter
③ Befestigungsschrauben des CCU-Adapters (Zubehör der CCU-300P)
①, ⑤ ⊕ K4 x 10
Montageplatte B
⑥ ⊕ B3 x 16
⊕ B4 x 16
(Von Seriennummer 10801)
Reg-Box
⑦ Das Kabel an den MONITOR-Anschluß an der Kamera anschließen.

STROMVERSORGUNGSANSCHLÜSSE

Netzbetrieb

1. Überprüfen Sie, ob der Netzspannungswähler auf die Spannung Ihres Versorgungsgebietes eingestellt ist. Wenn nicht, stellen Sie ihn richtig ein.

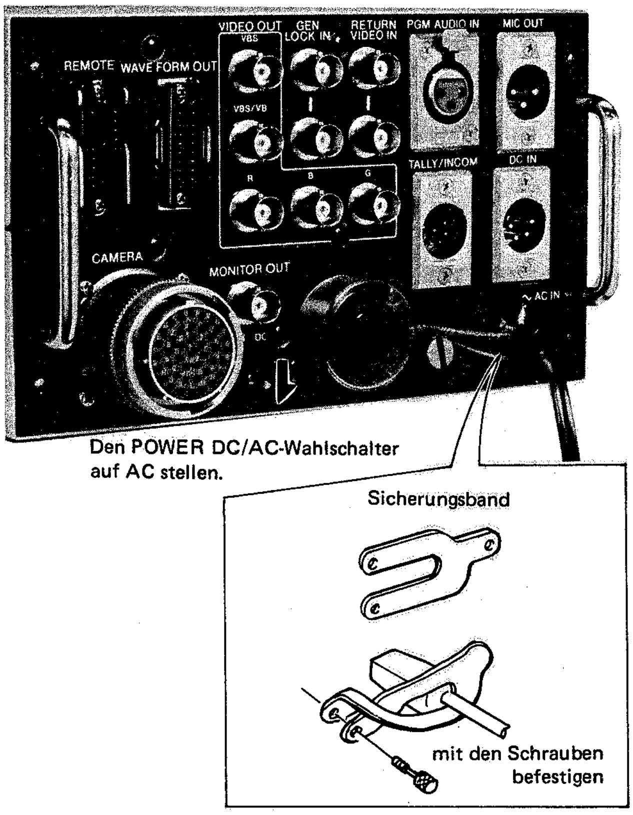

VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
~AC IN

Die Schraube lösen und so einstellen, daß die richtige Voltzahl sichtbar ist.

100V: 100V ±10%
120V: 120V ±10%
220V: 220V ±10%
240V: 240V ±10%

Wenn bei auf 100V stehendem Netzspannungswähler eine Spannung von 220V angelegt wird, wird der CCU-300P beschädigt, und die Sicherung brennt durch.

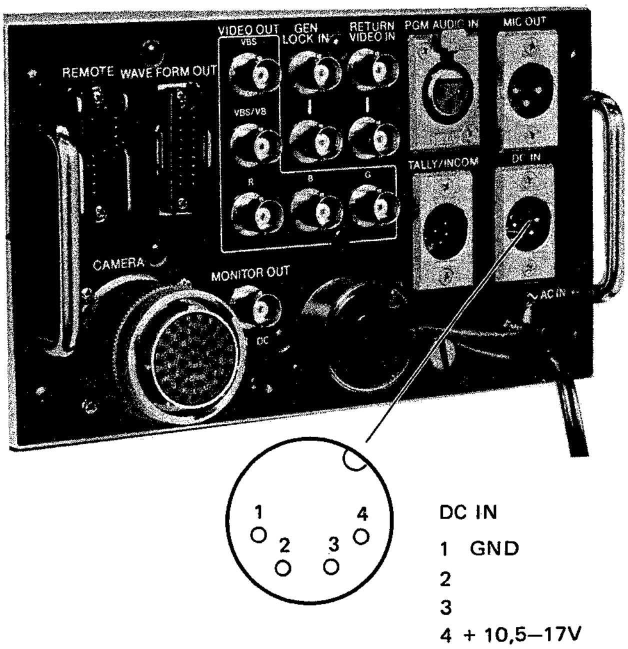
2. Stecken Sie den Netzkabelstecker ein, und sichern Sie ihn mit dem Band, damit er sich bei Zugbeanspruchung nicht lösen kann.


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
DC
~AC IN
Den POWER DC/AC-Wahlschalter auf AC stellen.
Sicherungsband
mit den Schrauben befestigen

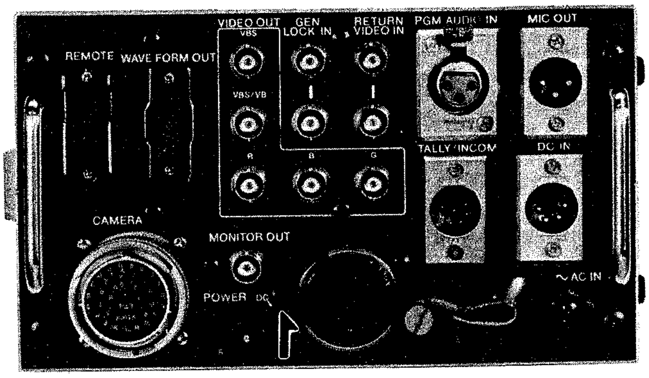
3. Stellen Sie den POWER DC/AC-Wahlschalter auf AC (siehe obige Abbildung).

Betrieb mit Gleichstrom

1. Schließen Sie die 10,5 – 17V Gleichstromversorgung an den DC IN-Anschluß an (XLR-4-32).


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
DC
~AC IN
1
4
2
3
DC IN
1 GND
2
3
4 + 10,5–17V

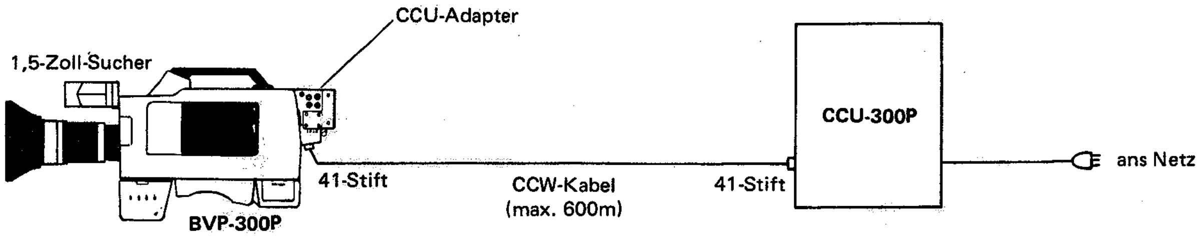
2. Stellen Sie den POWER DC/AC-Wahlschalter auf DC.


VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
~AC IN

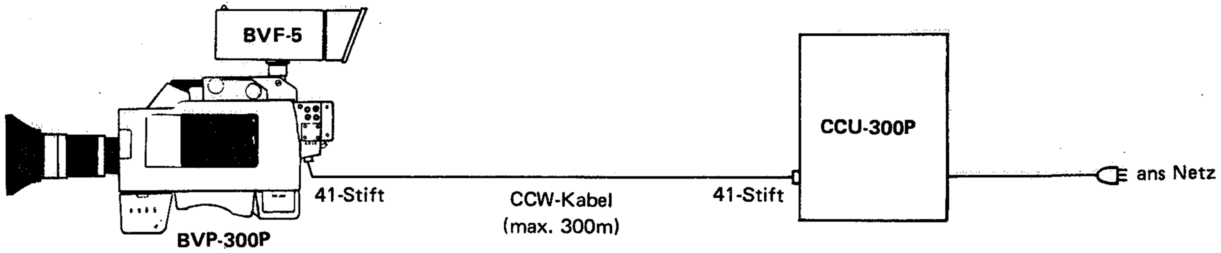
Bei Gleichstrombetrieb dient dieser Schalter als Ein/Aus-Schalter. Wenn er auf DC gestellt wird, ist die Gleichstromversorgung eingeschaltet.

KAMERAANSCHLÜSSE

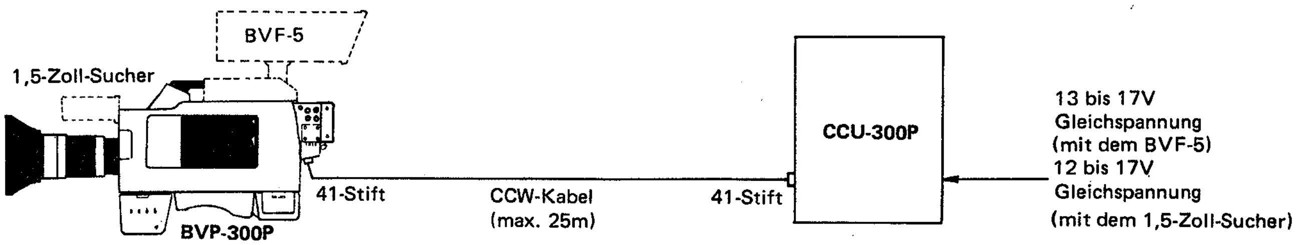
Netzbetrieb


CCU-Adapter
1,5-Zoll-Sucher
CCU-300P
ans Netz
41-Stift
CCW-Kabel
(max. 600m)
41-Stift
BVP-300P

- Die maximale Kabellänge beträgt 300 Meter, wenn der BVF-5 (Sonderzubehör) verwendet wird.

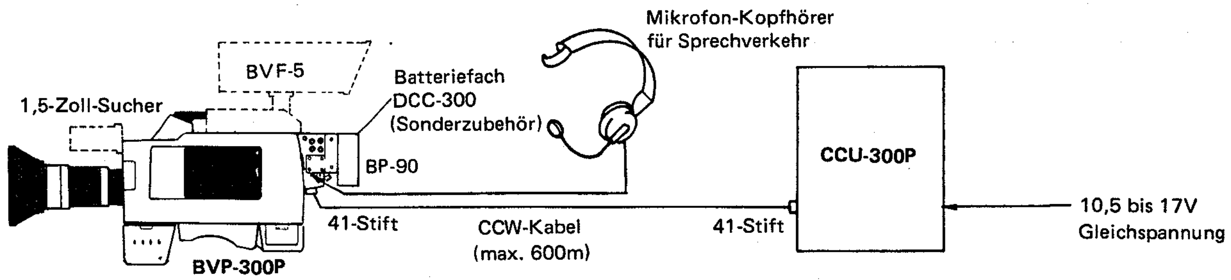

BVF-5
CCU-300P
ans Netz
41-Stift
CCW-Kabel
(max. 300m)
41-Stift
BVP-300P

Gleichstrombetrieb


BVF-5
1,5-Zoll-Sucher
CCU-300P
13 bis 17V
Gleichspannung
(mit dem BVF-5)
12 bis 17V
Gleichspannung
(mit dem 1,5-Zoll-Sucher)
41-Stift
CCW-Kabel
(max. 25m)
41-Stift
BVP-300P

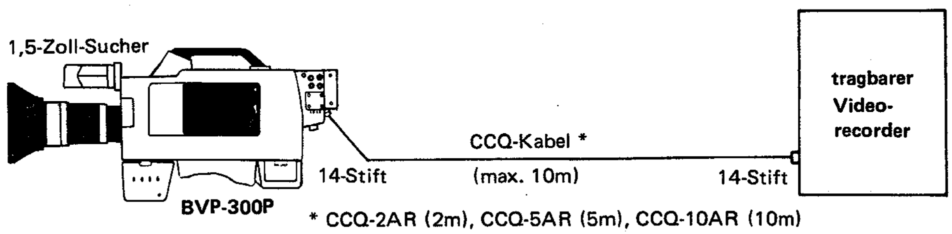
Die maximale Kabellänge beträgt 50m, wenn die Gleichstromversorgung mit dem BVF-5 oder 1,5-Zoll-Sucher 14 bis 17V ist.

- Die maximale Kabellänge beträgt 600 Meter, wenn die Kamera eine eingebaute Batterie hat (siehe Abbildung unten).
- Die Batterie arbeitet ca. 1 Stunde mit der BVF-5 und ca. 2 Stunden mit dem 1,5-Zoll-Sucher.


Mikrofon-Kopfhörer
für Sprechverkehr
BVF-5
Batteriefach
DCC-300
(Sonderzubehör)
1,5-Zoll-Sucher
BP-90
CCU-300P
10,5 bis 17V
Gleichspannung
41-Stift
CCW-Kabel
(max. 600m)
41-Stift
BVP-300P

Bei Gebrauch eines tragbaren Videorecorders

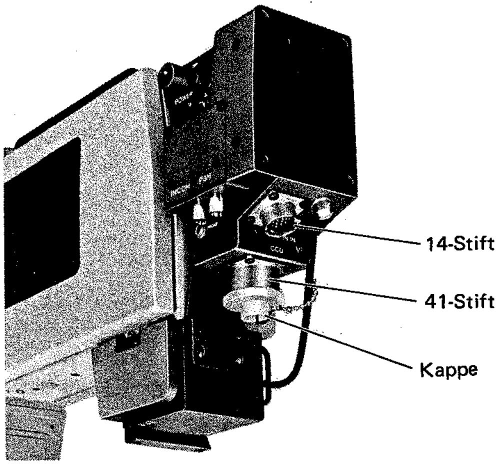
- Der BVF-5 kann nicht verwendet, wenn der Strom vom tragbaren Videorecorder versorgt ist.


1,5-Zoll-Sucher
tragbarer
Video-
recorder
CCQ-Kabel *
14-Stift
(max. 10m)
14-Stift
BVP-300P

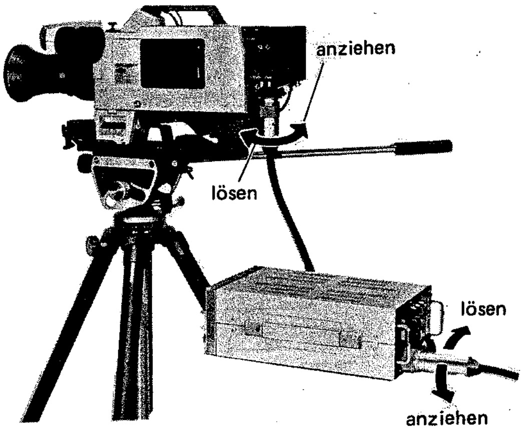
* CCQ-2AR (2m), CCQ-5AR (5m), CCQ-10AR (10m)

Vorsicht

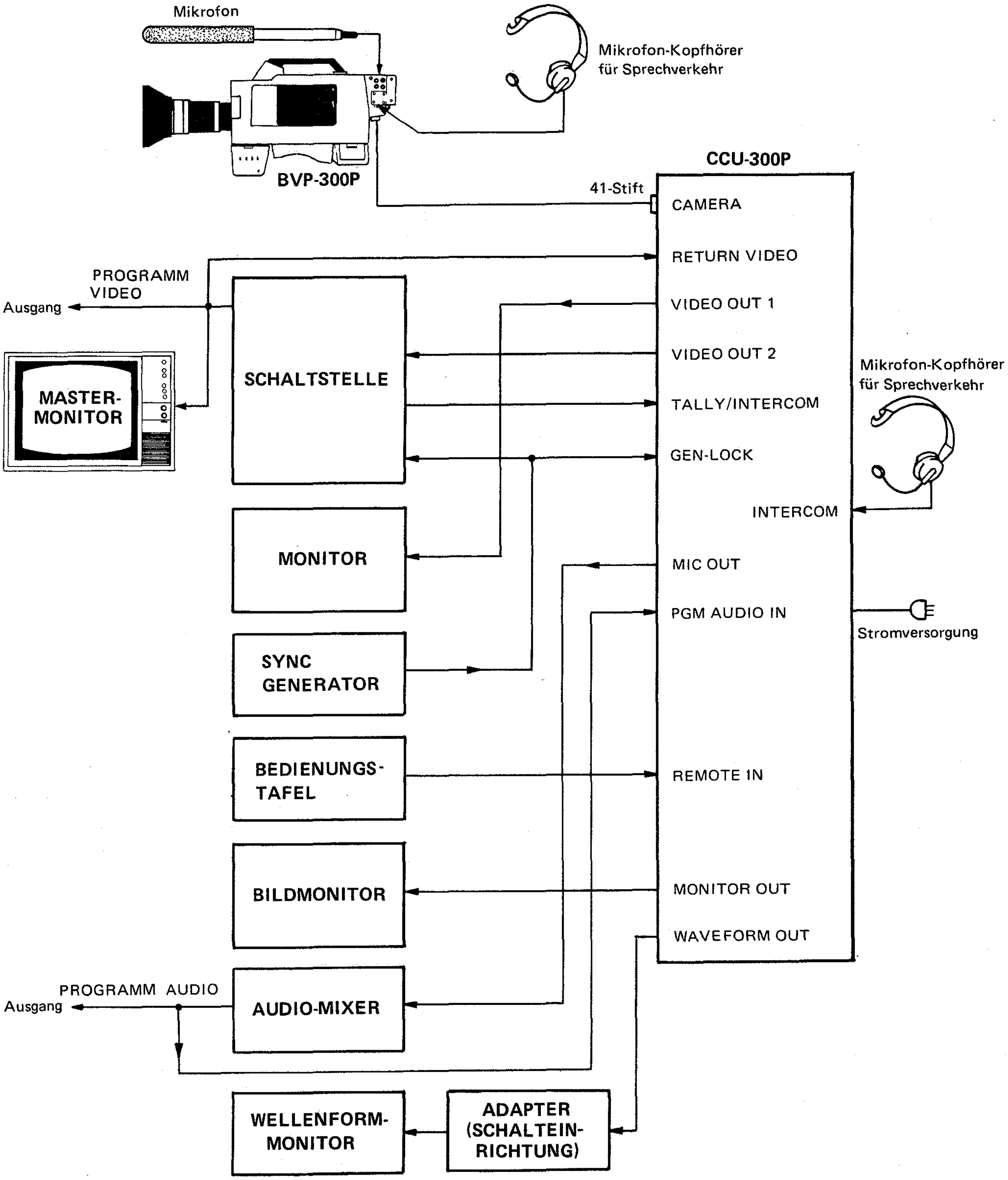
Unter keinen Umständen dürfen der 41-Stift- und der 14-Stift-Anschluß des CCU-Adapters **zusammen benutzt werden.** Setzen Sie die Kappe auf den Anschluß, der nicht benutzt wird.


14-Stift
41-Stift
Kappe

- Schließen Sie das CCW-Kabel unter Beachtung der richtigen Lage der Kontaktstifte an. Durch Rechtsdrehung wird das Kupplungsstück am Kameraende angezogen und das Kupplungsstück am CCU-Ende gelöst.

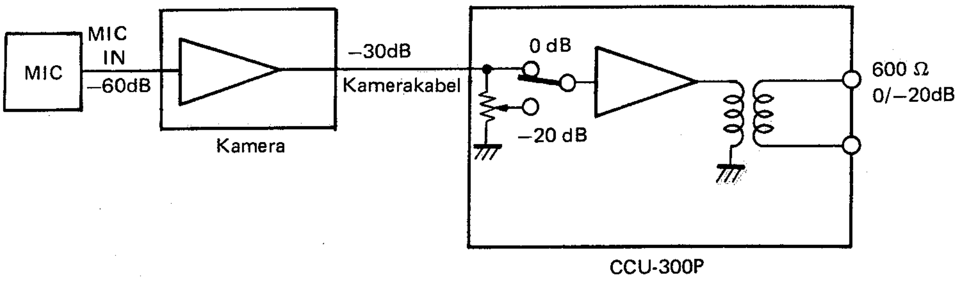

anziehen
lösen
lösen
anziehen

BEISPIELE FÜR SYSTEMANSCHLÜSSE

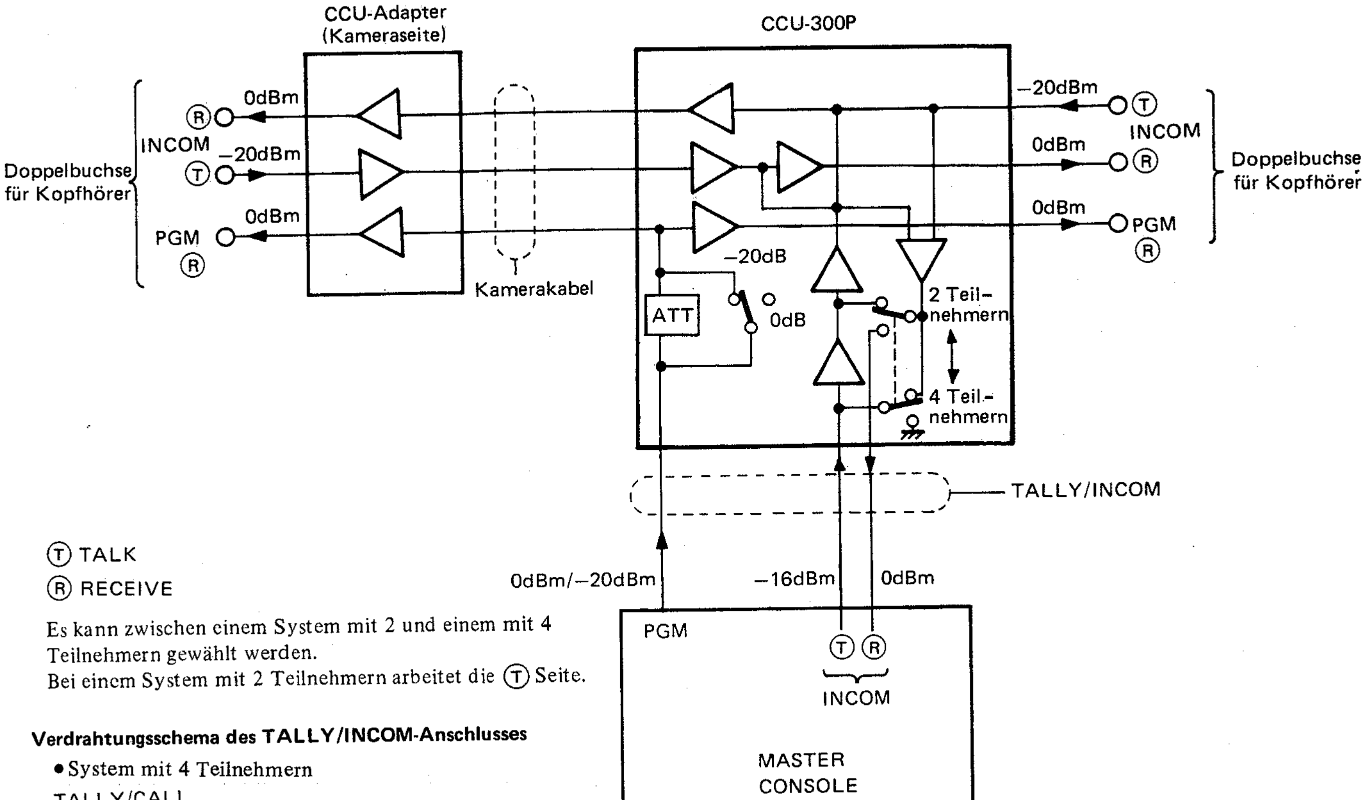

Mikrofon
Mikrofon-Kopfhörer für Sprechverkehr
BVP-300P
CCU-300P
41-Stift
CAMERA
RETURN VIDEO
PROGRAMM VIDEO
Ausgang
VIDEO OUT 1
VIDEO OUT 2
MASTER-MONITOR
SCHALTSTELLE
TALLY/INTERCOM
Mikrofon-Kopfhörer für Sprechverkehr
GEN-LOCK
INTERCOM
MONITOR
MIC OUT
PGM AUDIO IN
Stromversorgung
SYNC GENERATOR
BEDIENUNGS-TAFEL
REMOTE IN
BILDMONITOR
MONITOR OUT
WAVEFORM OUT
PROGRAMM AUDIO
Ausgang
AUDIO-MIXER
WELLENFORM-MONITOR
ADAPTER (SCHALTEINRICHTUNG)

DIAGRAMME

Audio-Systemdiagramm


MIC
MIC IN
–60dB
–30dB
Kamerakabel
Kamera
0 dB
–20 dB
600 Ω
0/–20dB
CCU-300P

PGM AUDIO/INCOM-Systemdiagramm

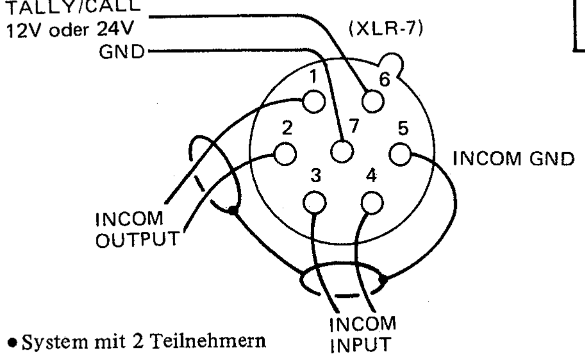

CCU-Adapter (Kameraseite)
CCU-300P
Doppelbuchse für Kopfhörer
INCOM
Ⓡ
0dBm
Ⓣ
–20dBm
PGM
0dBm
Ⓡ
Kamerakabel
–20dBm
Ⓣ
INCOM
0dBm
Ⓡ
0dBm
PGM
Ⓡ
Doppelbuchse für Kopfhörer
–20dB
ATT
0dB
2 Teil-nehmern
4 Teil-nehmern
TALLY/INCOM
0dBm/–20dBm
–16dBm
0dBm
PGM
Ⓣ Ⓡ
INCOM
MASTER CONSOLE

Ⓣ TALK
Ⓡ RECEIVE

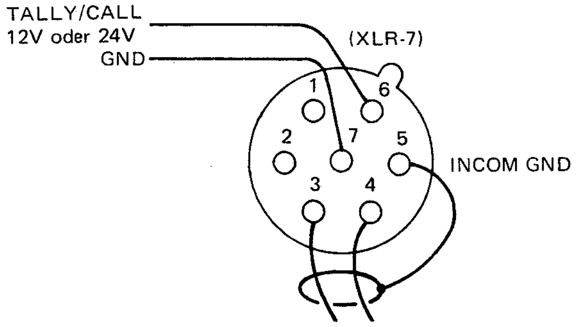
Es kann zwischen einem System mit 2 und einem mit 4 Teilnehmern gewählt werden.
Bei einem System mit 2 Teilnehmern arbeitet die Ⓣ Seite.

Verdrahtungsschema des TALLY/INCOM-Anschlusses

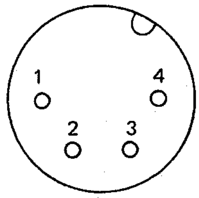
- System mit 4 Teilnehmern


TALLY/CALL
12V oder 24V
GND
(XLR-7)
1
2
3
4
5
6
7
INCOM GND
INCOM OUTPUT
INCOM INPUT

- System mit 2 Teilnehmern

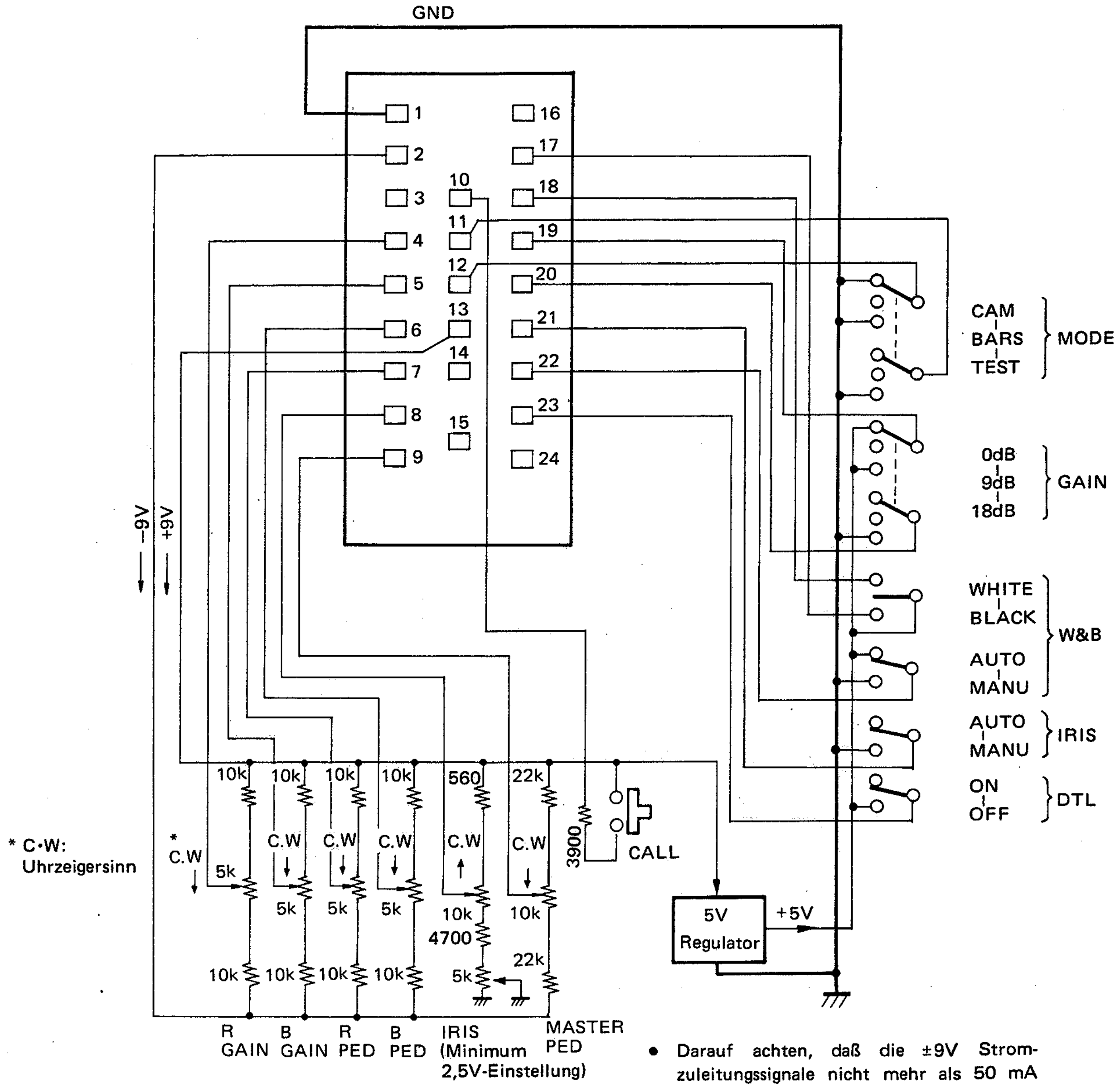

TALLY/CALL
12V oder 24V
GND
(XLR-7)
1
2
3
4
5
6
7
INCOM GND

Verdrahtungsschema des DC IN-Anschlusses



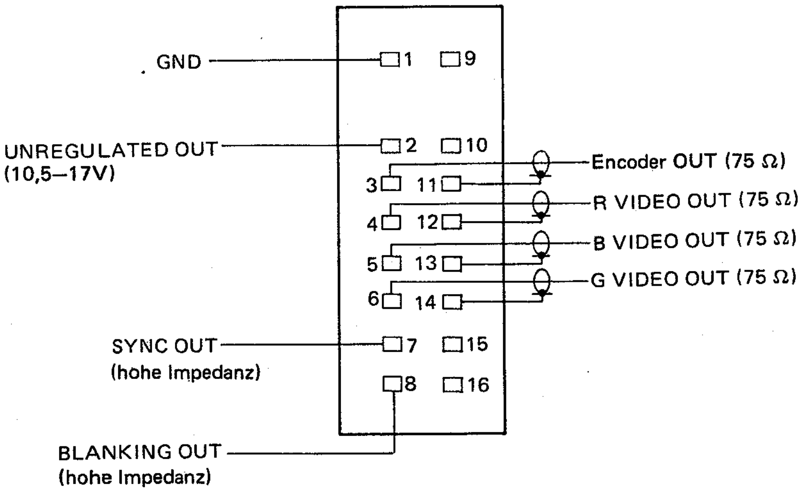
1. GND
2.
3.
4. +12V–17V

Verdrahtungsschema des REMOTE-Anschlusses (für OCP)

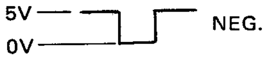

GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
–9V
+9V
CAM
BARS
TEST
MODE
0dB
9dB
18dB
GAIN
WHITE
BLACK
AUTO
MANU
W&B
AUTO
MANU
IRIS
ON
OFF
DTL
10k
10k
10k
10k
560
22k
3900
CALL
* C•W:
Uhrzeigersinn
C.W
5k
5k
5k
5k
10k
10k
4700
22k
5k
10k
10k
10k
10k
5V
Regulator
+5V
R
GAIN
B
GAIN
R
PED
B
PED
IRIS
(Minimum
2,5V-Einstellung)
MASTER
PED

- Darauf achten, daß die ±9V Stromzuleitungssignale nicht mehr als 50 mA haben.

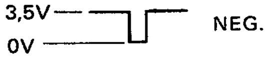
Verdrahtungsschema des WAVEFORM OUT-Anschlusses


GND
UNREGULATED OUT
(10,5–17V)
SYNC OUT
(hohe Impedanz)
BLANKING OUT
(hohe Impedanz)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Encoder OUT (75 Ω)
R VIDEO OUT (75 Ω)
B VIDEO OUT (75 Ω)
G VIDEO OUT (75 Ω)

- UNREGULATED OUT
  Max. 0,1 Amp.
- BLANKING OUT (hohe Impedanz)



- SYNC OUT (hohe Impedanz)

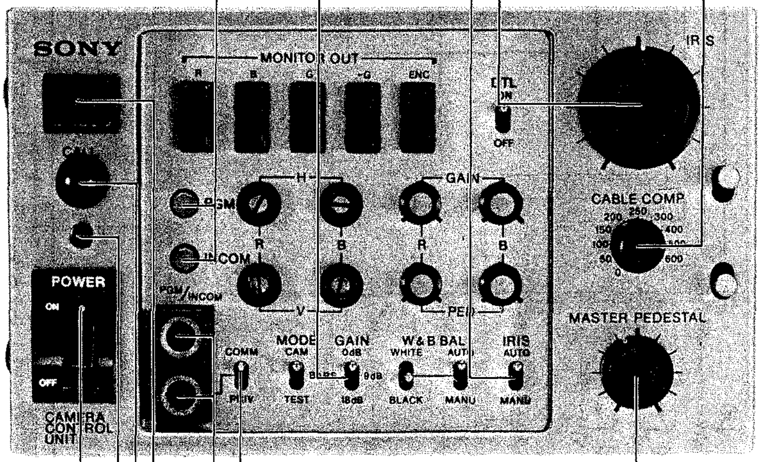


- Darauf achten, daß das Encoder-, Synchron- und Austastungsignal von einem Emitterverstärker etc. mit hoher Impedanz empfangen wird.

LAGE DER TEILE UND BEDIENUNGSELEMENTE

FRONTPLATTE

Hauptregler


SONY
MONITOR OUT
R
B
G
-G
ENC
DTL
ON
OFF
IRIS
H
GAIN
PGM
INCOM
R
B
R
B
V
PED
CABLE COMP
200
250
300
150
400
100
500
50
600
0
MASTER PEDESTAL
POWER
ON
OFF
CAMERA CONTROL UNIT
PGM/INCOM
COMM
PRIV
MODE
CAM
TEST
GAIN
0dB
9dB
18dB
W&B BAL
WHITE
BLACK
AUTO
MANU
IRIS
AUTO
MANU

① Netzschalter [POWER]

② Stromkontrollampe

③ Ruftaste [CALL]

④ Signal/Ruf-Lampe [TALLY/CALL]

⑤ Kopfhörer-Doppelbuchse [PGM/INCOM]

⑥ Sprechverkehr-Wahlschalter [INTERCOM]

⑦ Kopfhörerlautstärkeregler [PGM/INCOM]

⑧ Empfindlichkeitswähler [GAIN]

⑨ Blendenautomatik/Manual-Wähler [IRIS AUTO/MANUAL]

⑩ Blendenregler [IRIS]

⑪ Kabelkompensationswähler [CABLE COMP]

⑫ Schwarzwert-Hauptregler [MASTER PEDESTAL]

① Netzschalter [POWER]

- Dieser Schalter ist außer Funktion, wenn das Gerät mit Gleichstrom versorgt wird. In diesem Fall ist es gleichgültig, ober auf ON oder OFF steht.

② Stromkontrollampe (grün)

- Diese grüne LED leuchtet auf, wenn der POWER-Schalter ① auf ON gestellt wird.
- Sie blinkt, wenn bei Stromversorgung durch eine externe Gleichstromquelle die Versorgungsspannung unter den Nennwert absinkt.

③ Ruftaste [CALL]

- Während diese Taste gedrückt wird, leuchtet die TALL/CALL-Lampe ④ der CCU stärker, und die TALLY-Lampe der Kamera leuchtet auf.
- Wenn die CALL-Taste der CCU gedrückt wird, wenn der CCU-Adapter nicht an die CCU angeschlossen ist, ertönt als Hinweis im Gehäuseinneren ein Warnsignal.
- Wenn bei Druck der CALL-Taste des CCU-Adapters der Adapter und die CCU angeschlossen sind, ertönt das Warnsignal im Gehäuseinneren der CCU.

④ Signal/Ruf-Lampe [TALLY/CALL] (rot)

- Diese Lampe leuchtet schwach, wenn der POWER-Schalter ① auf ON steht. Sie leuchtet hell auf, wenn die CALL-Taste ③ gedrückt wird.
- Die Nummer der Signallampe (LED) kann mit Hilfe des internen Drehschalters (㊻ auf Seite 1-17) von 0 bis 9 gewählt werden.

⑤ Kopfhörer-Doppelbuchse [PGM/INCOM]

- Wenn ein Kophörer mit separatem rechten und linken Kanal (mit Doppelstecker) verwendet wird, können der Ton von Programm und Sprechverkehr gleichzeitig gehört werden.
  obere Buchse: Programm (PGM AUDIO)
  untere Buchse: Sprechverkehr (INCOM)
- Der Sprechverkehr ist parallel an die obere und untere Buchse angeschlossen. Eine Verständigung ist also über beide Buchsen möglich.
- Wenn daher ein normaler Kopfhörer mit Einfachstecker an die untere Buchse. angeschlossen wird, ist Gegensprechverkehr möglich, und wenn er an die obere Buchse angeschlossen wird, ist Sprechverkehr und Empfang des Programmtons möglich.

⑥ Sprechverkehr-Wahlschalter [INTERCOM]

- Dies ist der Ein/Aus-Schalter für den externen Sprechverkehr.
  COMM: Das externe Sprechverkehrsystem (Regiepult etc.) und das interne Sprechverkehrsystem (Kamera und CCU) sind parallelgeschaltet. Verständigung zwischen drei Personen ist möglich.
  PRIV: Das externe Sprechverkehrsystem ist abgeschaltet, und Verständigung ist nur im internen Sprechverkehrsystem (Kamera und CCU) möglich.

⑦ Kopfhörerlautstärkeregler [PGM/INCOM]

- Hiermit wird die Lautstärke der Doppelbuchse ⑤ eingestellt.
- Mit dem PGM-Regler wird die Lautstärke des Programmtons PGM AUDIO eingestellt.
- Mit dem INCOM-Regler (unten) wird die Lautstärke des Sprechverkehrempfangs INCOM eingestellt.

⑧ Empfindlichkeitswähler [GAIN]

- Mit diesem Wähler wird der GAIN-Wähler der Kamera von der CCU ausgesteuert. Wenn die Beleuchtung des Aufnahmeobjektes schwach ist, kann die Empfindlichkeit um +9 dB oder +18 dB erhöht werden.
- Wenn die CCU angeschlossen ist, hat dieser Wähler Vorrang über den Schalter der Kamera.

⑨ Blendenautomatik/Manual-Wähler [IRIS AUTO/MANU]

- Wenn der IRIS-Schalter des Kameraobjektivs auf AUTO gestellt ist, können mit diesem Wähler die folgenden Einstellungen vorgenommen werden.
  AUTO: Das Kameraobjektiv wird auf Automatik (AUTO IRIS) geschaltet.
  MANU: Die Blende kann mit dem IRIS-Regler ⑩ manuell eingestellt werden.
- Wenn der IRIS-Schalter der Objektivs auf MANU steht, kann von der CCU aus keine Blendeneinstellung vorgenonmmen werden.

⑩ Blendenregler [IRIS]

- Hiermit wird bei der oben erwähnten Einstellung von der CCU aus die Blende manuell eingestellt. Einstellung von OPEN bis CLOSE ist möglich.

⑪ Kabelkompensationswähler [CABLE COMP]

- Hiermit ist Kabelkompensation entsprechend der Länge des Kamerakabels möglich. Der Wähler ist so einjustiert, daß bei Position „0.“ passende Kompensation für ein 25-Meter-Kabel gewährleistet ist.

⑫ Schwarzwert-Hauptregler [MASTER PEDESTAL]

- Hiermit wird der Schwarzwert-Hauptpegel von der CCU aus geregelt.
- Der Regler ist mit dem PED-Regler (Schwarzwert-Hauptregler) der Kamera parallelgeschaltet. Eine Einstellung kann über beide Regler vorgenommen werden.

Regler

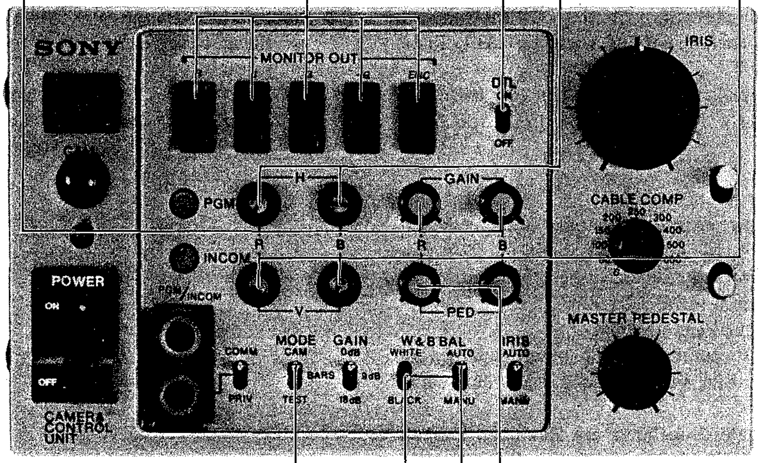
⑱ Monitorausgang-Wahltasten [MONITOR OUT]

⑲ Konturenkorrekturschalter [DETAIL]

⑳ Regler für Horizontalzentrierung [H CENTERING]

⑰ Empfindlichkeitsregler [GAIN]

㉑ Regler für Vertikalzentrierung [V CENTERING]


SONY
MONITOR OUT
DTL
ON
OFF
IRIS
H
GAIN
PGM
INCOM
R
B
R
B
V
PED
CABLE COMP
MASTER PEDESTAL
POWER
ON
OFF
CAMERA CONTROL UNIT
PGM/INCOM
COMM
PRIV
MODE
CAM
BARS
TEST
GAIN
0dB
9dB
18dB
W&B BAL
WHITE
BLACK
AUTO
MANU
IRIS
AUTO
MANU

⑬ Kameraausgangswähler [MODE]

⑭ Weiß- und Schwarzabgleichschalter [W & B BAL]

⑮ Weiß-/Schwarzabgleich Auto/Manual-Schalter [W & B BAL AUTO/MANU]

⑯ Schwarzwertpegelregler [PEDESTAL]

⑬ Kameraausgangswähler [MODE]

- Hiermit werden der OUTPUT-Wähler (CAM/BARS) auf der seitlichen Bedienungstafel der Kamera und der in die Kamera eingebaute TEST-Schalter von der CCU ausgesteuert.

  CAM: Als Ausgangssignale der CCU stehen die normalen Kameraausgangssignale (von der Aufnahmeröhre) zur Verfügung.

  BARS: Die CCU-Ausgangssignale sind die Farbbalkensignale von der Kamera.

  TEST: Das CCU-Ausgangssignal ist das Testsignal von der Kamera.
- Wenn die CCU angeschlossen ist, hat die CCU Vorrang über die Kamera.
- Wenn der MODE-Wähler auf TEST gestellt wird, schließt sich die Blende automatisch, damit die Aufnahmeröhre geschützt ist.

⑭ Weiß- und Schwarzabgleichschalter [W & B BAL]

- Wenn der AUTO/MANU-Wähler ⑮ auf AUTO steht, kann mit Hilfe dieses Schalters automatisch der Weiß- und der Schwarzabgleich hergestellt werden.
- Wenn dieser Schalter auf WHITE (oder BLACK) gestellt und für etwa 2 Sekunden in dieser Position gehalten wird, ist der Weißabgleich (oder Schwarzabgleich) erreicht. Zur Vollendung der Einstellung überprüfen Sie, ob die REC/WB-Lampe der Kamera aufleuchtet oder überprüfen die Wellenform. Gehen Sie in der Reihenfolge WHITE → BLACK → WHITE VOR.

⑮ Weiß-/Schwarzabgleich Auto/Manual-Schalter [W & B BAL AUTO/MANU]

AUTO: Auf diese Position stellen, wenn automatischer Weiß- und Schwarzabgleich erfolgen soll.

MANU: Auf diese Position stellen, wenn die Grobeinstellung der PED-Regler ⑯ und des GAIN-Reglers ⑰ durchgeführt werden soll.

- Wenn dieser Wahlschalter auf AUTO steht ist eine Feineinstellung des Schwarzwertpegels und der Empfindlichkeit möglich, wobei der Einstellbereich allerdings auf etwa ein Viertel reduziert ist.

⑯ Schwarzwertpegelregler

- Durch Drehung der Regler R und B können der Rot- und Blau-Schwarzpegel separat eingestellt werden.
- Grob- und Feineinstellung sind bei den oben beschriebenen Positionen des Wahlschalters ⑮ möglich.

⑰ Empfindlichkeitsregler [GAIN]

- Durch Drehung der Regler R und B können die Empfindlichkeitspegel für Rot und Blau separat eingestellt werden.
- Grob- und Feineinstellung sind bei den oben beschriebenen Positionen des Wahlschalters ⑮ möglich.

⑱ Monitorausgang-Wahltasten [MONITOR OUT]

- Mit diesen Tasten werden die am MONITOR OUT-Anschluß ㉖ (siene Seite 1-14) anliegenden Ausgangssignale zur Einstellung der Registrierhaltigkeit der Kamera gewählt.

  ENC: Für das Ausgangssignal des Encoders.

  R, B, G, –G: Durch Druck mehrerer dieser Tasten kann ein Signalgemisch erhalten werden.

  (Beispiel) R und –G = R–G Signal
  B und –G = B–G Signal
  R, B und G = R+B+G Signal
- In diese Tasten sind Leuchtdioden eingebaut. Bei Druck einer Taste leuchtet die eingebaute LED auf.
- Die R-, B-, G- und ENC-Tasten sind gekoppelt. Wenn die R-, B- und G-Tasten gleichzeitig gedrückt werden, werden sie alle auf ON geschaltet.
- Die –G-Taste ist unabhängig. Wenn jedoch bei gedrückter –G-Taste die ENC-Taste gedrückt wird, wird die –G-Taste elektrisch abgeschaltet, und die LED erlischt.

⑲ Konturenkorrekturschalter [DETAIL]

Mit diesem Schalter kann der in die Kamera eingebaute Konturenkorrekturschaltkreis von der CCU aus auf ON und OFF gestellt werden. Die oben beschriebene Einstellung der Registrierhaltigkeit wird erleichtert, wenn dabei dieser Schalter auf OFF gestellt und damit das Konturenkorrektursignal abgeschaltet wird.

⑳ Regler für Horizontalzentrierung [H CENTERING]

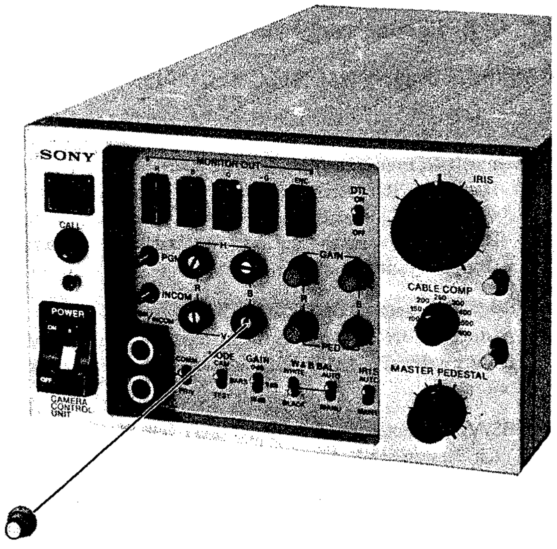
- Diese Regler dienen zur Korrektur einer Abweichung der horizontalen Registrierhaltigkeit von der CCU aus. Die Einstellung erfolgt unabhängig für R und B.
- Diese Regler sind mit den CENTERING-Reglern der Kamera parallelgeschaltet. Eine Einstellung ist also sowohl direkt an der Kamera als auch von der CCU aus möglich.

㉑ Regler für Vertikalzentrierung [V CENTERING]

- Diese Regler dienen zur Korrektur einer Abweichung der vertikalen Registrierhaltigkeit von der CCU aus. Die Einstellung erfolgt unabhängig für R und B.
- Diese Regler sind mit den CENTERING-Reglern der Kamera parallelgeschaltet. Eine Einstellung ist also sowohl direkt an der Kamera als auch von der CCU aus möglich.

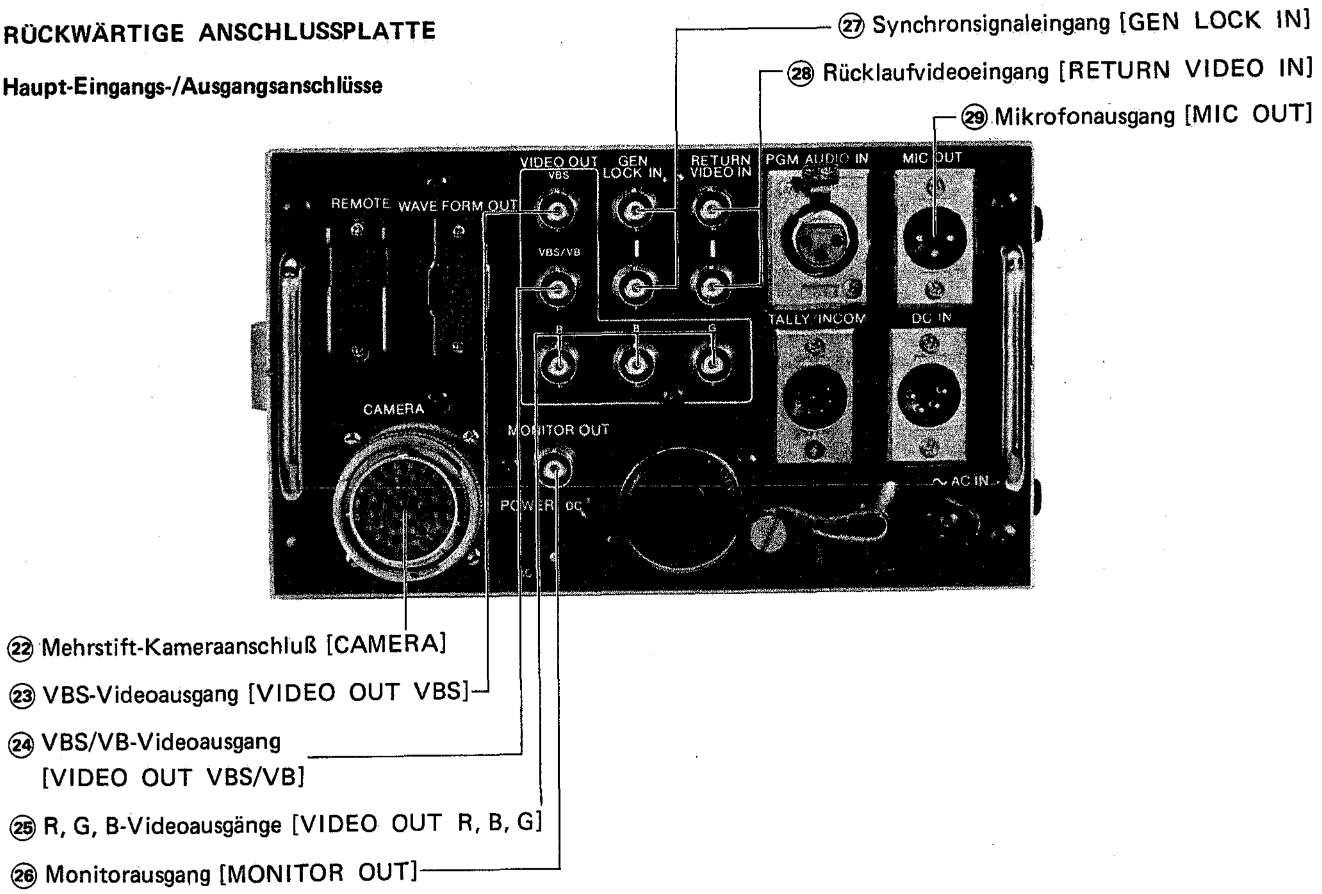
Zentrierregler

An den Zentrierreglern sind keine Einstellknöpfe vorhanden. Zum Einstellen nehmen Sie die Schutzdeckel ab, und bringen Sie die als Zubehör mitgelieferten Einstellknöpfe an.



RÜCKWÄRTIGE ANSCHLUSSPLATTE

Haupt-Eingangs-/Ausgangsanschlüsse


㉗ Synchronsignaleingang [GEN LOCK IN]
㉘ Rücklaufvideoeingang [RETURN VIDEO IN]
㉙ Mikrofonausgang [MIC OUT]
VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
REMOTE
WAVE FORM OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER
DC
AC IN
㉒ Mehrstift-Kameraanschluß [CAMERA]
㉓ VBS-Videoausgang [VIDEO OUT VBS]
㉔ VBS/VB-Videoausgang [VIDEO OUT VBS/VB]
㉕ R, G, B-Videoausgänge [VIDEO OUT R, B, G]
㉖ Monitorausgang [MONITOR OUT]

㉒ **Mehrstift-Kameraanschluß [CAMERA]**
- Dieser 41-Stift-Anschluß dient zur Verbindung der Kamera mit der CCU über das CCW-Kabel (Sonderzubehör).
- Den Kabelstecker einstecken und zur Sicherung den Kupplungsring nach links drehen.

㉓ **VBS-Videoausgang [VIDEO OUT VBS]**

An diesem BNC-Anschluß kann das kodierte Ausgangssignal, das durch die CCU voll kompensiert worden ist, abgenommen werden.

㉔ **VBS/VB-Videoausgang [VIDEO OUT VBS/VB]**
- An diesem BNC-Anschluß liegt das gleiche Kameraausgangssignal wie vorher beschrieben an.
- Mit dem internen Schalter (㊳, auf Seite 1-17) kann zwischen dem VBS- und dem VB-Ausgangssignal gewählt werden.
- Im Verhältnis zum VBS-Signal ist das VB-Signal um ca. 300 nsec verzögert.

㉕ **R, B, G-Videoausgänge [VIDEO OUT R, B, G]**
- Über diese BNC-Anschlüsse werden R, B und G-Ausgangssignale, die unabhängig voneinander durch die CCU kompensiert worden sind, hinausgeleitet.
- Diese Anschlüsse dienen als Ausgänge für getastete Chrominanzsignale.
- Diese Signale haben im Verhältnis zum VBS-Ausgangssignal eine Voreilung von ca. 800 nsec.

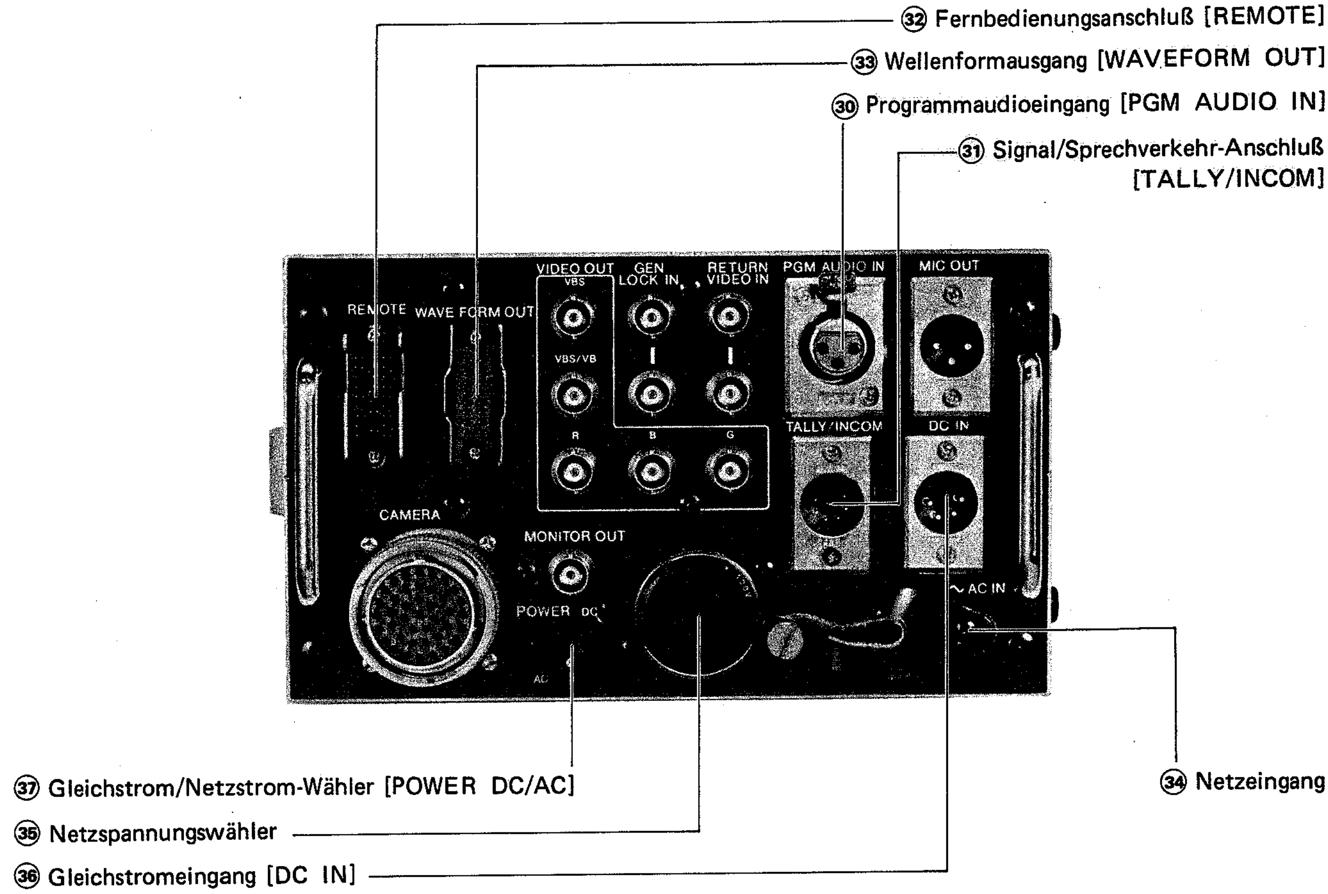
㉖ **Monitorausgang [MONITOR OUT]**
- Über diesen BNC-Anschluß wird das mit den MONITOR OUT-Tasten (⑱ auf Seite 1-13) gewählte Ausgangssignal hinausgeleitet.
- Das Ausgangssignal dient zur Einstellung der Registrierhaltigkeit und zur Überwachung der Kamera.

㉗ **Synchronsignaleingang [GEN LOCK IN]**
- Diese BNC-Anschlüsse sind für das Schwarzburst- (oder VBS)-Bezugssignal, das der CCU zur Synchronisierung der Kamera eingespeist wird.
- Wenn über diese Anschlüsse kein Bezugssignal eingespeist wird, wird die Kamera automatisch auf interne Synchronisierung geschaltet.
- Es sind zwei Anschlüsse, oben und unten, in „durchgeschalteter" Konfiguration vorhanden. Wenn nur ein Anschluß benutzt wird, bringen Sie daher an dem anderen einen 75-Ohm-Abschlußwiderstand an.

㉘ **Rücklaufvideoeingang [RETURN VIDEO IN]**
- Diese BNC-Eingangsanschlüsse sind für die Rücklaufvideosignale, die vom Regiepult oder dem Videorecorder zur Kamera zurückgeleitet werden.
- Es sind zwei Anschlüsse, oben und unten, in „durchgeschalteter" Konfiguration vorhanden. Wenn nur ein Anschluß benutzt wird, bringen Sie daher an dem anderen einen 75-Ohm-Abschlußwiderstand an.

㉙ **Mikrofonausgang [MIC OUT]**
- An diesem XLR-3-Stift-Anschluß liegt das verstärkte Ausgangssignal vom Kameramikrofon an, was von hier zur nächsten Stufe weitergeleitet wird. (Siehe das Audiosystemdiagramm auf Seite 1-8).
- Mit dem internen Schalter ㊴ kann ein Ausgangspegel von 0 dB oder –20 dB gewählt werden (siehe Seite 1-17).

Stromversorgung, Zusatzanschlüsse


㉜ Fernbedienungsanschluß [REMOTE]
㉝ Wellenformausgang [WAVEFORM OUT]
㉚ Programmaudioeingang [PGM AUDIO IN]
㉛ Signal/Sprechverkehr-Anschluß [TALLY/INCOM]
REMOTE
WAVE FORM OUT
VIDEO OUT
VBS
GEN LOCK IN
RETURN VIDEO IN
PGM AUDIO IN
MIC OUT
VBS/VB
R
B
G
TALLY/INCOM
DC IN
CAMERA
MONITOR OUT
POWER DC
AC
AC IN
㊲ Gleichstrom/Netzstrom-Wähler [POWER DC/AC]
㉞ Netzeingang
㉟ Netzspannungswähler
㊱ Gleichstromeingang [DC IN]

㉚ **Programmaudioeingang [PGM AUDIO IN]**
Über diesen XLR-3-Stift-Anschluß werden die Programm-Audiosignale der Doppelbuchse (⑤ auf Seite 1-10) zugeleitet.

㉛ **Signal/Sprechverkehr-Anschluß [TALLY/INCOM]**
- Dieser XLR-7-Stift-Anschluß dient zur TALLY/INCOM-Verbindung mit der externen Einheit (Schalteinrichtung).
- Siehe Seite für das Anschlußschema und das PGM AUDIO/INCOM-Systemdiagramm.

㉜ **Fernbedienungsanschluß [REMOTE]**
- Dieser 24-Stift-Anschluß ist für die Bedienungstafel. Siehe Seite 1-9 für das Anschlußschema.
- Den Schalter (㊺ auf Seite 1-17) auf der Seite der gedruckten Leiterplatte zur Wahl zwischen Fern- und Direktbedienung (REMOTE oder LOCAL) benutzen.
- Darauf achten, daß die ±9V Stromausgangssignale nicht mehr als 50 mA haben.

㉝ **Wellenformausgang [WAVEFORM OUT]**
- Dieser 16-Stift-Anschluß liefert den Strom und die verschiedenen Signale, die zur Überwachung der Wellenformen auf einem Monitor notwendig sind.
- Für das Anschlußschema siehe Seite 1-9.

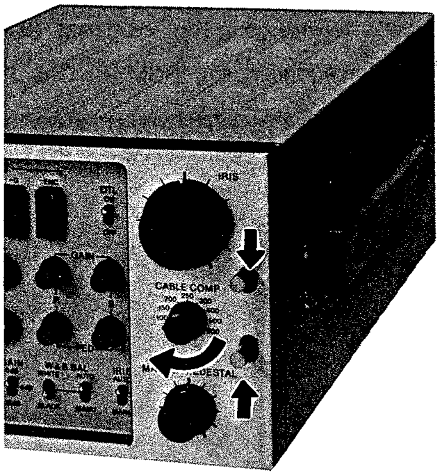
㉞ **Netzeingang [AC IN]**
Wenn die CCU am Netz betrieben werden soll, stecken Sie den Stecker des Netzkabels (mitgeliefert) in diese Buchse, und sichern Sie es mit dem Sicherungsband.

㉟ **Netzspannungswähler**
- Entsprechend der Netzspannung im Verwendungsgebiet einstellen.
- Wenn der Wähler falsch eingestellt ist, arbeitet die CCU nicht störungsfrei, und wenn irrtümlicherweise eine zu hohe Spannung zugeleitet wird, wird der Regler im Inneren beschädigt.

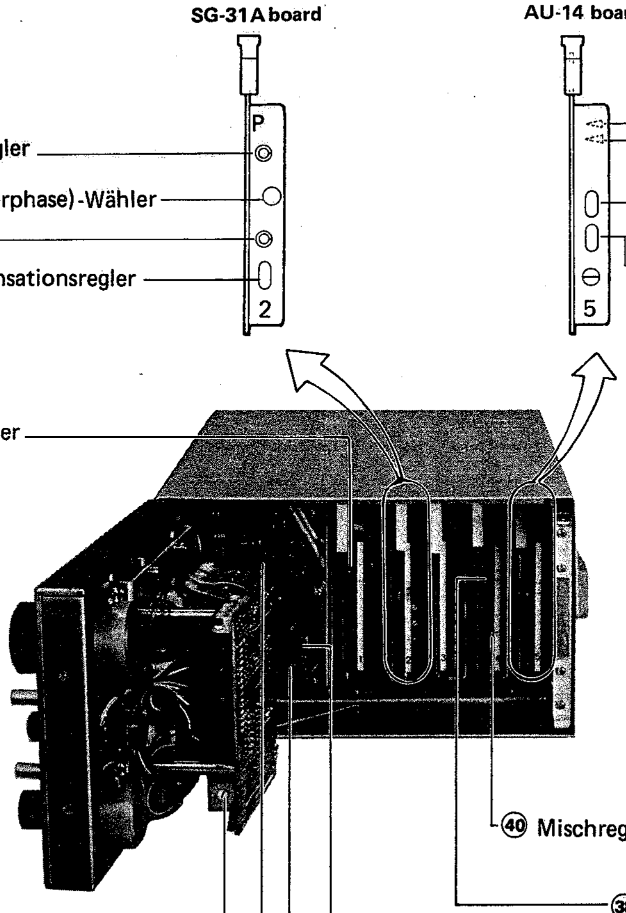
㊱ **Gleichstromeingang [DC IN]**
- Dieser Eingang dient zum Betrieb der CCU mit Gleichstrom. Stift 1 dieses XLR-4-Stift-Anschlusses ist die Erde; Stift 4 ist der Pluspol der Stromversorgung.
- Wenn die Kamera von der CCU mit Strom versorgt wird, beträgt die erforderliche Spannung 12–17V, und wenn die Kamera nicht über die CCU mit Strom versorgt wird beträgt der zulässige Spannungsbereich 10,5–17V.

㊲ **Gleichstrom/Netzstrom-Wähler [POWER DC/AC]**
- Dieser Schalter dient zur Wahl zwischen Gleichstrom- und Netzbetrieb.
- Wenn die CCU mit Gleichstrom betrieben wird, fungiert dieser Schalter auch als Ein/Aus-Schalter. Die Stromversorgung ist bei ON eingeschaltet und bei AC abgeschaltet. (Dies gilt nur, wenn keine Netzspannung anliegt.)

EINSTELLELEMENTE IM GERÄTEINNEREN



Die beiden Hebel in Pfeilrichtung zusammendrücken und die Frontplatte aufklappen. (Zum Schließen umgekenrt vorgehen.)



(50) Sprechverkehr-Wähler [INCOM] (2W/4W)

(51) Nebenton-Regler [SIDE TONE]

(52) 0 dB/–20 dB Audioeingangspegelwähler

(39) 0 dB/–20 dB Mikrofonausgangspegelwähler

(43) SC (Hilfsträgerphase)-Feinregler

(42) 270°/180°/90°/0° (Hilfsträgerphase)-Wähler

(44) Horizontalphasenregler [H]

(41) Synchronsignal-Kabelkompensationsregler [300m/0m]

(45) Direkt-/Fernbedienungswähler [LOC/REM]

(40) Mischregler [MIX VF] (Mix-Monitor-Mischverhältnis)

(38) VBS/VB (Videoausgang)-Wähler

(46) Signallampennummernwähler [TALLY]

(47) Netzstromsicherung

(48) Gleichstromsicherung

(49) CCU-Sicherung

Leiterplatte

Nr.	Bezeichnung
1.	PW-47 (Stromversorgungsregelung)
2.	SG-31A (Synchrongenerator)
3.	VA-5 (Videoverstärker)
4.	VA-6 (Videoverstärker)
5.	AU-14 (Audioverstärker)

㊳ **Videoausgangswähler [VBS/VB]**
Hiermit wird das Signal, das am VIDEO OUT-Anschluß (㉔ auf Seite 1-14) anliegt, gewählt; VB oder VBS

㊴ **Mikrofonausgangspegelwähler [0 dB/–20 dB]**
Hiermit wird der am MIC OUT-Anschluß ㉙ anliegende Signalpegel gewählt; 0 dB oder –20 dB.

㊵ **Mischregler [MIX VF]**
Dieser Regler dient zur Einstellung des Mischverhältnisses von dem Kameraausgangssignal und dem Rücklaufvideosignal, das dem Kamerasucher zugeleitet wird.

㊶ **300m/0m-Wähler**
Dieser Wähler dient zur Einstellung der Kabelkompensation (Kabel; 3C-2V) für das Synchron-Bezugssignal, das über den GEN LOCK IN-Anschluß ㉗ zugeleitet wird (auf Seite 1-14).

0m:	Kabellänge von 0–150m
300m:	Kabellänge von 150–450m

㊷ **270°/180°/90°/0°-Wähler**
Dieser Drehschalter dient zur Einstellung der Hilfsträgerphasendifferenz zwischen dem Synchron-Bezugssignal und dem Ausgangssignal. Er ist in vier Stufen mit Intervallen von 90° einstellbar.

㊸ **SC-Feinregler**
Dieser Regler dient zur Feineinstellung der Hilfsträgerphasendifferenz zwischen dem Synchron-Bezugssignal und dem Ausgangssignal. Justieren Sie diesen Regler nach der Grobeinstellung mit dem Wähler ㊷ ein. Der Einstellbereich beträgt 90°.

㊹ **H-Regler**
Hiermit wird die Horizontalphasendifferenz des Synchron-Bezugssignals und Ausgangssignals eingestellt. Der Einstellbereich ist von +3 μsec bis –1,5 μsec oder mehr.

㊺ **LOC/REM-Wähler**
Hiermit können die Hauptfunktionen der Frontplatte zur Bedienungsplatte umgeschaltet werden.

LOC:	Zur Bedienung direkt an der CCU (LOCAL).
REM:	Zur Bedienung über die Bedienungsplatte (REMOTE).

㊻ **Signallampennummernwähler [TALLY]**
Mit diesem Drehschalter können die von der TALLY/CALL-Lampe (④ auf Seite 1-11) angezeigten Nummern eingestellt werden (von 0 bis 9). Bei Normalbetrieb nicht die Buchstabenposition benutzen.

㊼ **Netzstromsicherung**
Diese Sicherung ist in den vom Netzeingang ㉞ kommenden Netzstromkreis eingeschaltet. (4 A-Sicherung).

㊽ **Gleichstromsicherung**
Diese Sicherung ist in den vom DC IN-Anschluß ㊱ kommenden Gleichstromkreis eingeschaltet. (2 A-Sicherung)
Der der Kamera von der CCU zugeleitete Strom fließt nicht über diese Sicherung sondern wird direkt zugeleitet.

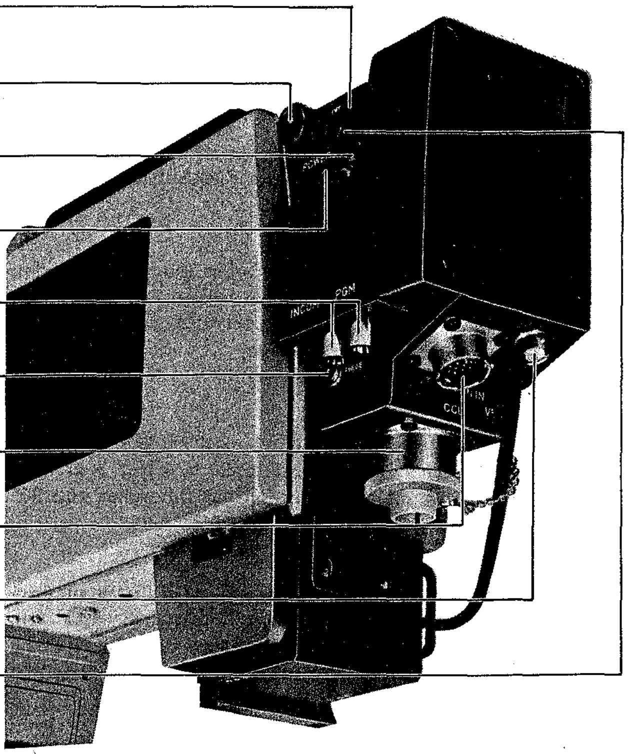
㊾ **CCU-Sicherung**
Diese Sicherung ist in den nichtregulierten (12V) Stromkreis von dem Schaltregler eingeschleift. (2 A-Sicherung)

㊿ **Sprechverkehr-Wähler [INCOM]**
Ziehen Sie die Leiterplatte Nr. 5 (AU-14) heraus. Der Wähler befindet sich auf der Platte. Dieser Schalter dient zur Wahl zwischen einem Sprechverkehrssystem mit 2 oder 4 Teilnehmern.

(51) **Nebenton-Regler [SIDE TONE]**
Dieser Regler dient zur Lautstärkeregelung des Nebentons* beim Zweidraht-Sprechverkehrsystem. Im Normalfall die Lautstärke des Nebentons auf Minimum stellen.
* Nebenton: Die eigene Stimme, die man beim Sprechverkehr über den Kopfhörer mithört.

(52) **Audioeingangspegelregler [0 dB/–20 dB]**
Hiermit wird der am PGM AUDIO IN-Anschluß ㉚ anliegende Signalpegel gewählt; 0 dB oder –20 dB.

CCU-ADAPTER



PGM
INCOM
POWER
CCU

② Ruftaste [CALL]

① Kamera-Ein/Aus-Schalter [POWER]

③ Programmtonlautstärkeregler [PGM AUDIO]

④ Sprechverkehrlautstärkeregler [INCOM]

⑤ Kopfhörer-Doppelbuchse [PGM/INCOM]

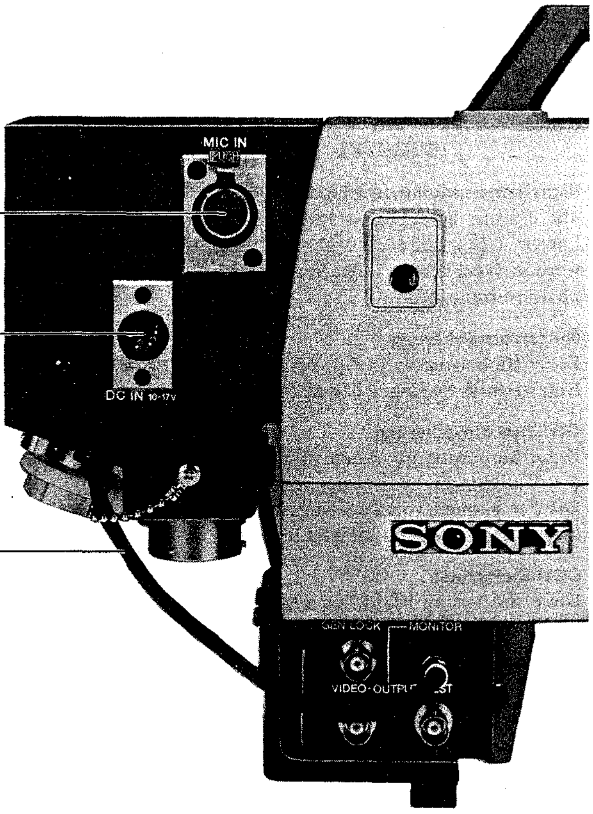
⑥ Ohrhörerbuchse [PHONE]

⑦ CCU-Mehrstiftanschluß

⑧ Videorecorder-Mehrstiftanschluß

⑨ Gleichstromausgang für den Sucher [VF DC OUT]

⑩ Kamerastromsicherung



MIC IN
DC IN 10-17V
SONY
GEN LOCK
MONITOR
VIDEO OUTPUT
TEST

⑪ Mikrofonanschluß [MIC IN]

⑫ Kamera-Gleichstromanschluß [DC IN]

⑬ Monitorausgangskabel [MONITOR OUT]

① **Kamera-Ein/Aus-Schalter [POWER]**
Dies ist der Ein/Aus-Schalter für die Kamera (gleich wie bei einer hormalen BVP-300).

② **Ruftaste [CALL]**
Diese Taste dient zum Rufen der CCU. Auf Druck leuchtet die TALLY/CALL-Lampe (④ auf Seite 1-11) der CCU hell auf.

③ **Lautstärkeregler [PGM AUDIO]**
Hiermit wird der Lautstärkepegel des Programmtons der an der Doppelbuchse ⑤ anliegenden Signale eingestellt.

④ **Sprechverkehrlautstärkeregler [INCOM]**
Zur Einstellung der Lautstärke der Sprechverkehrssignale der Doppelbuchse ⑤.

⑤ **Kopfhörer-Doppelbuchse [PGM/INCOM]**
An diese Doppelbuchse wird der Kopfhörer angeschlossen. Sie wird auf die gleiche Weise wie die Doppelbuchse der CCU (⑤ auf Seite 1-11) benutzt.

⑥ **Ohrhörerbuchse [PHONE]**
Bei Anschluß eines Ohrhörers an diese Buchse kann der vom Videorecorder zurückkommende Ton überwacht werden. (Minibuchse, 8 Ohm)

⑦ **CCU-Mehrstiftanschluß**
Dieser 41-Stift-Anschluß dient zur Verbindung von CCU und Kamera. Schließen Sie die CCU mit dem CCW-Kabel (Sonderzubehör) an.

⑧ **Videorecorder-Mehrstiftanschluß**
Dieser 14-Stift-Anschluß wird benutzt, wenn Kamera in Verbindung mit einem tragbaren Videorecorder (14-Stift) arbeitet. Stellen Sie die Verbindung über ein CCQ-Kabel (Sonderzubehör) her. (Siehe Seite 1-5 für ein Anschlußbeispiel.)

⑨ **Gleichstromausgang für den Sucher [VF DC OUT]**
Dieser Ausgangsanschluß dient dazu, den 5-Zoll-Sucher BVF-5 (Sonderzubehör) mit Strom zu versorgen.

⑩ **Kamerastromsicherung**
Diese Sicherung ist in den Stromversorgungskreis der Kamera eingeschleift. (4 A-Sicherung)

⑪ **Mikrofonanschluß [MIC IN]**
Der Ausgang vom Kameramikrofon wird über diesen XLR-3-Stift-Anschluß eingespeist.

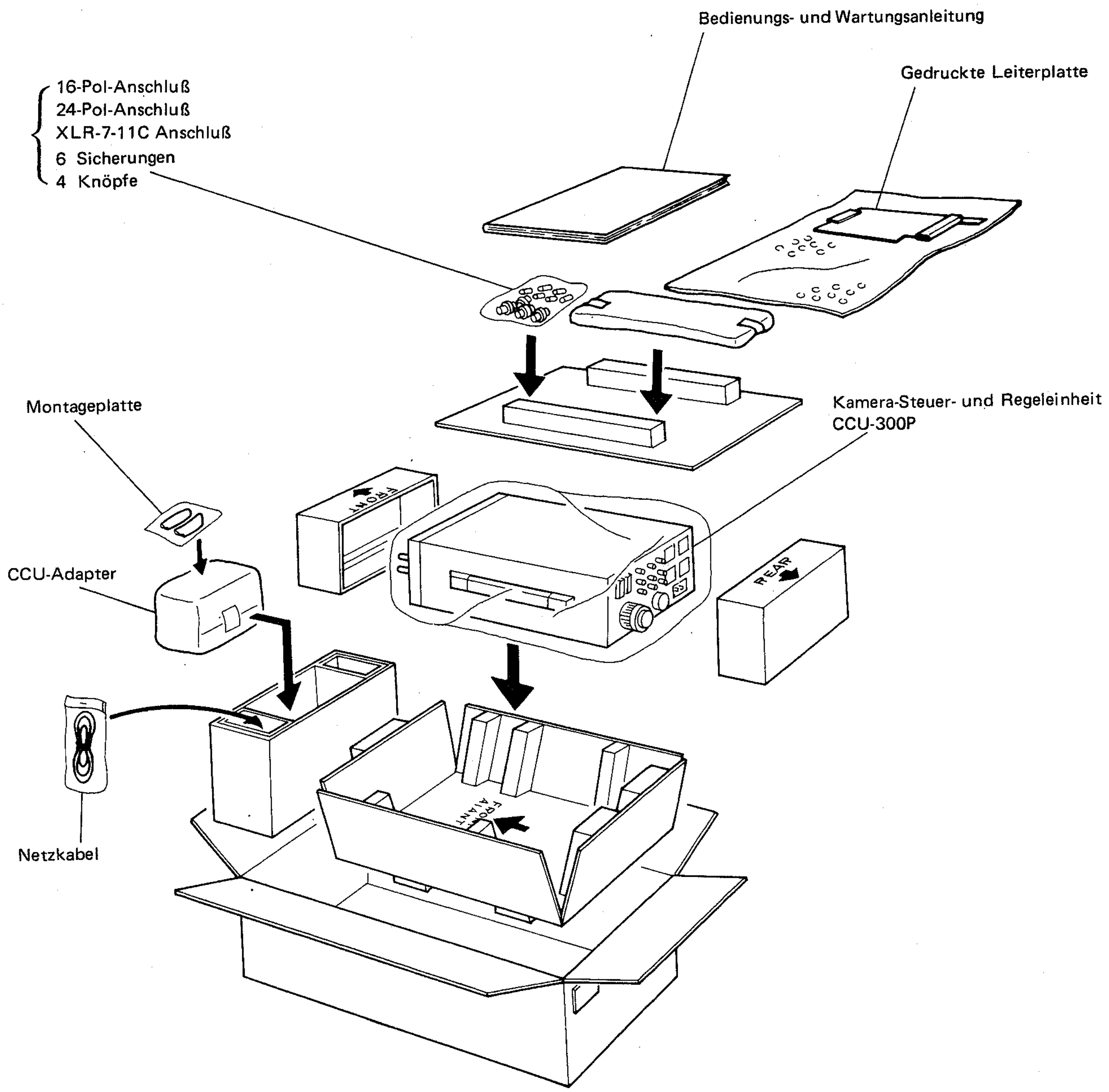
⑫ **Kamera-Gleichstromanschluß [DC IN]**
Schließen Sie das Batteriefach DCC-300 (Sonderzubehör) an diesen Anschluß an, wenn die Kamera separat mit Strom versorgt werden soll.

⑬ **Monitorausgangskabel [MONITOR OUT]**
Schließen Sie dieses Kabel an den MONITOR-Anschluß der Kamera an.

VORSICHT BEIM BETRIEB

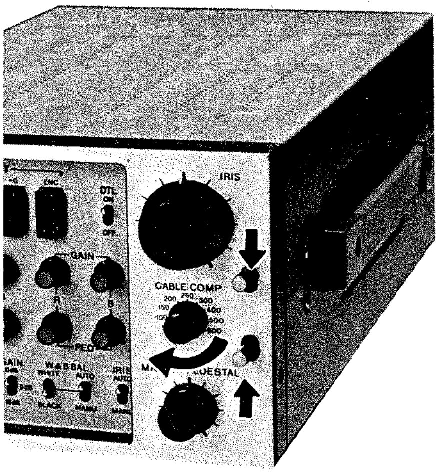
1. Das CCW-Kabel **nicht an die CCU anschließen oder abnehmen**, während der Strom eingeschaltet ist.
2. **Vor dem Betrieb** die CCU-Regler auf Mittelposition bringen und die Einstellungen von Zentrierung, Empfindlichkeit und Schwarzwertpegel der Kamera vollenden.
3. Bei Verwendung des 41-Stift-Kameraanschlusses die Schutzkappe an dem 14-Stift-Anschluß anbringen. Umgekehrt bei Verwendung des 14-Stift-Anschlusses die Schutzkappe auf den 41-Stift-Anschluß setzen.
4. Die Platte PW-47 (Seite 1-16) ist mit einem Hochspannungstrafo (600V) ausgerüstet. Beim Herausziehen daher nicht die gedruckte Leiterplatte berühren, da dies einen **gefährlichen elektrischen Schlag** hervorrufen kann.

VERPACKUNG

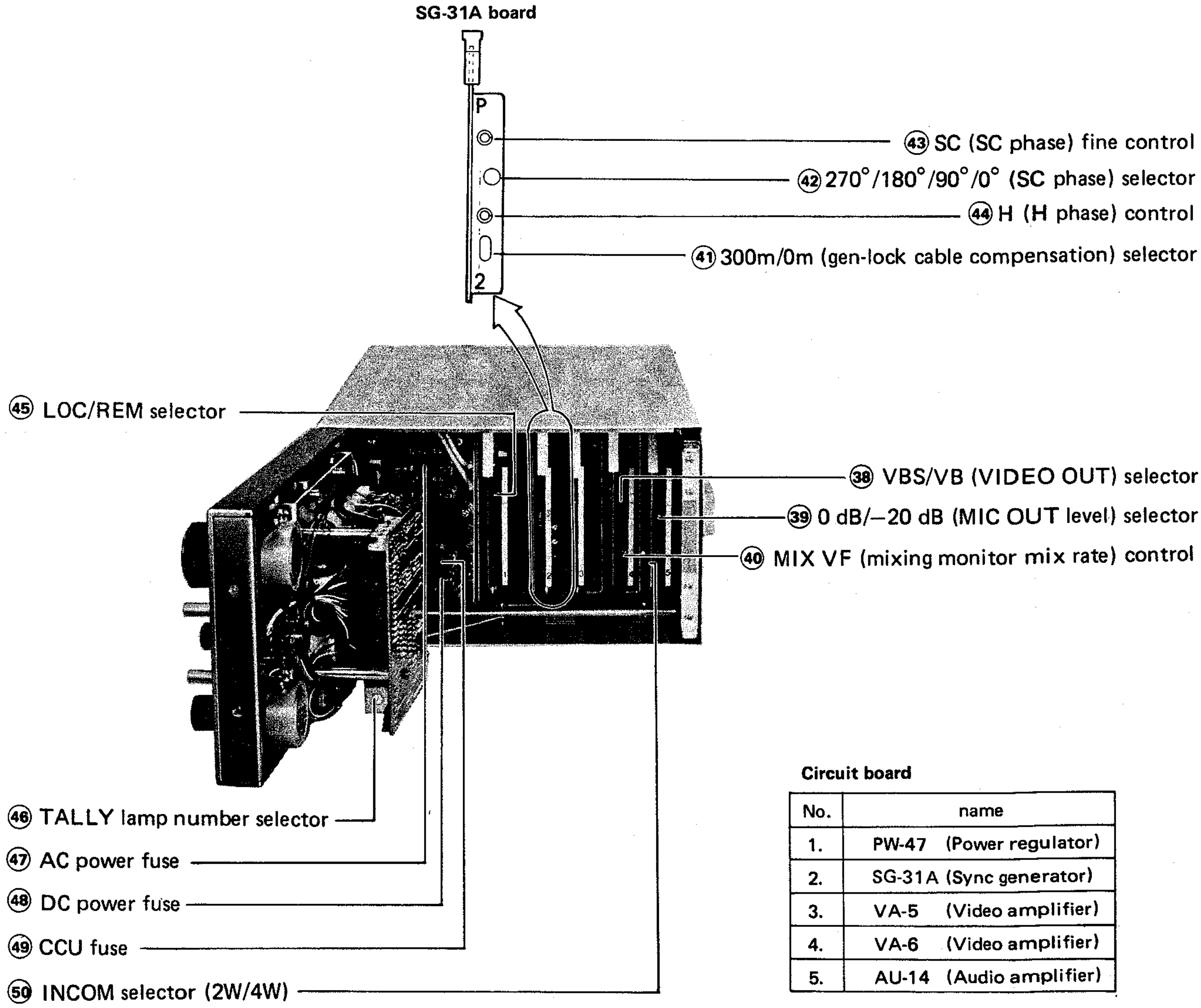

Bedienungs- und Wartungsanleitung
Gedruckte Leiterplatte
16-Pol-Anschluß
24-Pol-Anschluß
XLR-7-11C Anschluß
6 Sicherungen
4 Knöpfe
Montageplatte
Kamera-Steuer- und Regeleinheit CCU-300P
CCU-Adapter
Netzkabel
FRONT
REAR
FRONT AVANT

SECTION 2
COVER REMOVAL

FRONT PANEL OPENING


IRIS
DTL
GAIN
CABLE COMP
PED
W & B BAL
PEDESTAL

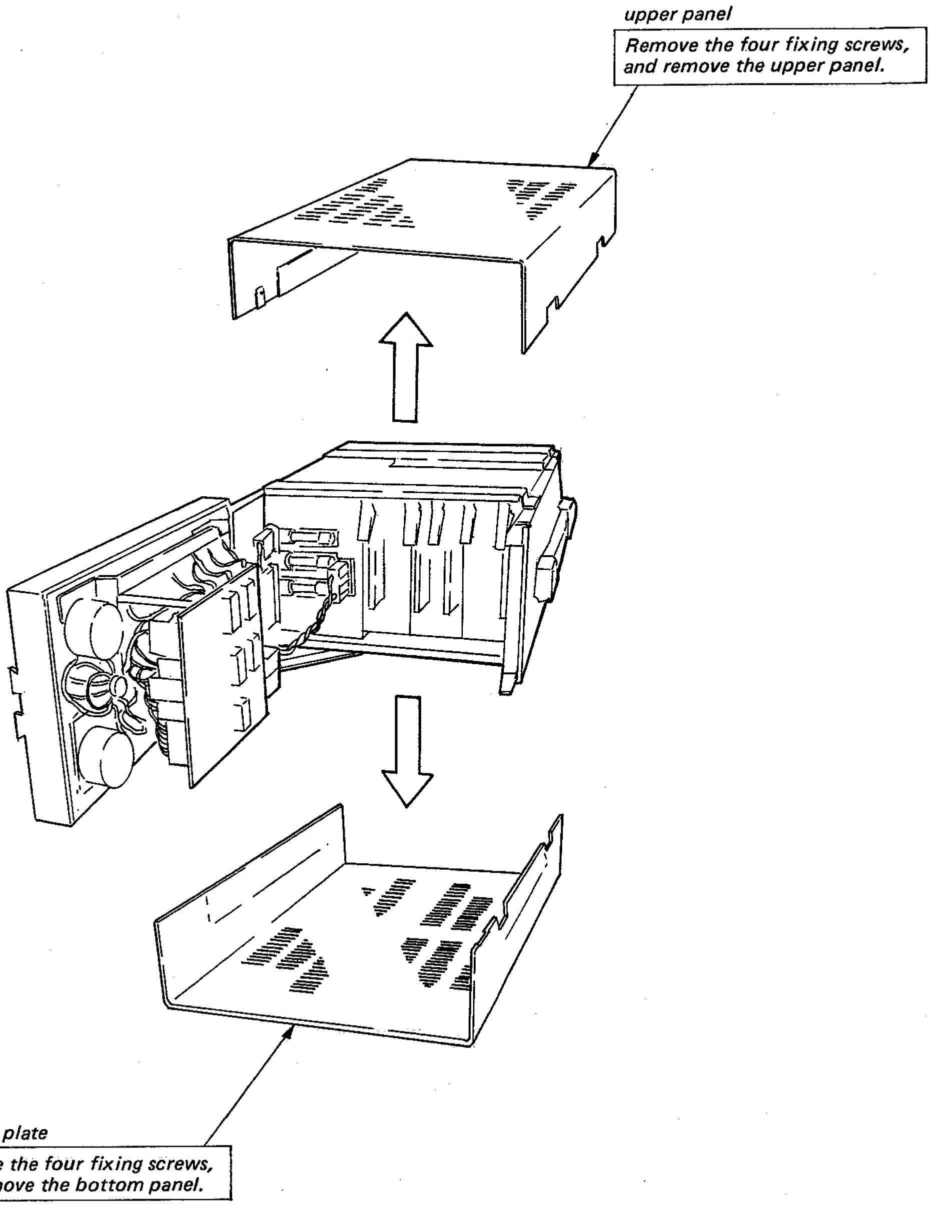
Depress the levers indicated by the arrows up or down and open the front panel.
(To close the panel, follow the reverse procedure.)


SG-31A board
P
2
㊸ SC (SC phase) fine control
㊷ 270°/180°/90°/0° (SC phase) selector
㊹ H (H phase) control
㊶ 300m/0m (gen-lock cable compensation) selector
㊺ LOC/REM selector
㊳ VBS/VB (VIDEO OUT) selector
㊴ 0 dB/–20 dB (MIC OUT level) selector
㊵ MIX VF (mixing monitor mix rate) control
㊻ TALLY lamp number selector
㊼ AC power fuse
㊽ DC power fuse
㊾ CCU fuse
㊿ INCOM selector (2W/4W)

Circuit board

No.	name
1.	PW-47 (Power regulator)
2.	SG-31A (Sync generator)
3.	VA-5 (Video amplifier)
4.	VA-6 (Video amplifier)
5.	AU-14 (Audio amplifier)

COVER REMOVAL


upper panel

Remove the four fixing screws, and remove the upper panel.

bottom plate

Remove the four fixing screws, and remove the bottom panel.

SECTION 3

ALIGNMENT

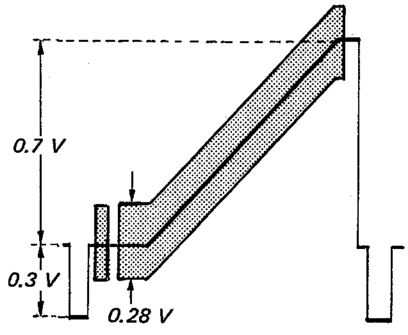
3-1. TEST EQUIPMENT

3-1-1. Equipment Required

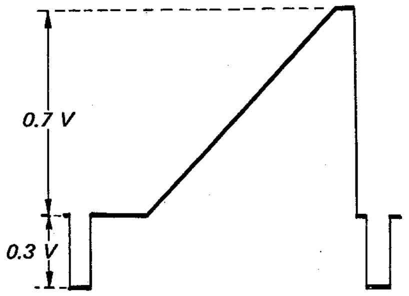
1. Dual Trace Oscilloscope (more than 30 MHz)
2. Waveform Monitor: TEKTRONIX Type 1481
   or equivalent
3. Vectorscope
4. Video Signal Generator:
   TEKTRONIX Type 1411 (Mainframe)
   SPG-11 (Sync Gen Module)
   TSG-13 (Linearity Module)
   TSG-16 (Multiburst Module)
5. Digital Voltmeter
6. Audio Signal Generator (1 KHz, sine wave)
7. Regulated DC Power Supply (12V, 0.1A)
8. Camera: BVP-300P (Standard Product)
   BVP-330P (Standard Product)
9. CCW Cable: CCW-25, 50, 100 (Standard Product)
   Cable length of 25m, 150m and 300m are required.
10. Extension Board: EX-8 (Supplied Accessory: SONY Parts
    No. A-7511-451-A)
11. Test Chart: In Mega Cycle or Multiburst Chart available from
    PORTA-PATTERN Ltd.

3-1-2. Video Signal Required

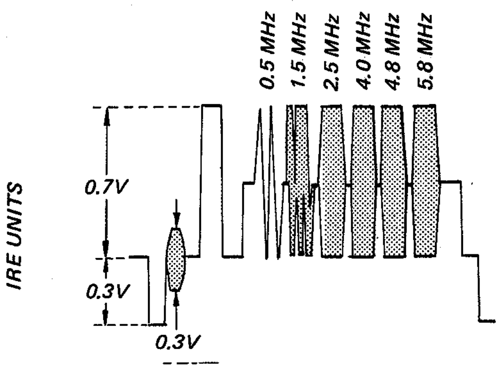
- PAL Colour Video Signal: Any video signal that has the PAL specified subcarrier and sync signals.
- PAL Ramp Linearity Test Signal with subcarrier



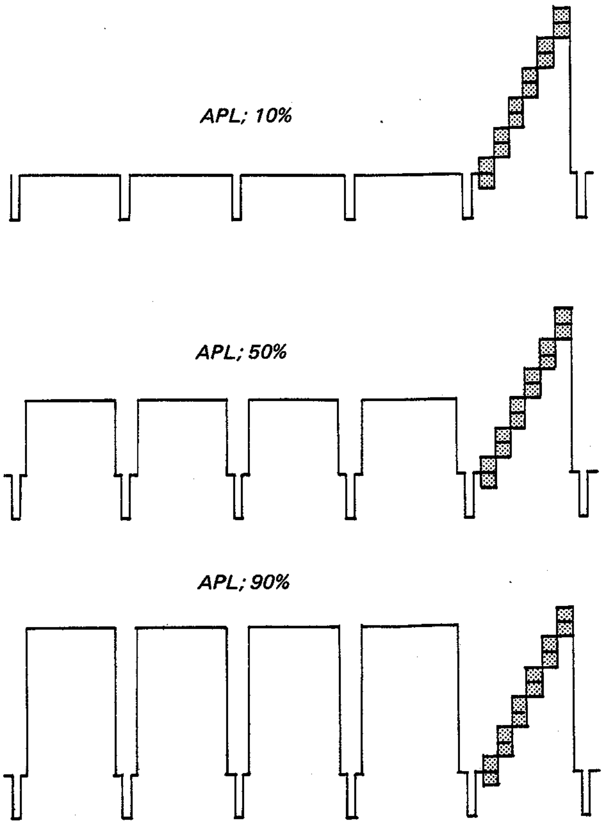
- Ramp Linearity Test Signal



- PAL Multiburst Signal



- PAL 5-step Liniarity Signal
  (APL testing)



3-2. PRESETTING OF EACH SWITCH AND CONTROL

3-2-1. Front Panel

MONITOR OUT selector → all OFF
DTL ON/OFF switch → ON
COMM/PRIV selector → COMM
MODE CAM/BARS/TEST selector → CAM
GAIN 0 dB/9 dB/18 dB selector → 0 dB
W & B BAL AUTO/MANU selector → AUTO
IRIS AUTO/MANU selector → AUTO
CABLE COMP selector → length of CCW cable
(0m position: CCW cable of 25m)

3-2-2. Rear Panel

POWER DC/AC → AC
VOLTAGE SELECTOR 100 V/120 V/220 V/240 V
→ Power Line Voltage

3-2-3. Printed Circuit Board

PW-47 LOC/REM selector → LOC
SG-31A SC (SC phase) fine control → fully ↺
270°/180°/90°/0° (SC phase) selector → 0°
H (H phase) control → center position
300m/0m (gen-lock cable compensation) selector → 0m
VA-6 VBS/VB (VIDEO OUT) selector → VBS
MIX VF (mixing monitor mix rate) control → fully ↺
AU-14 INCOM selector (2W/4W) → 2W
0 dB/−20 dB (MIC OUT level) selector → 0 dB

3-3. CONNECTION

Connection (1)

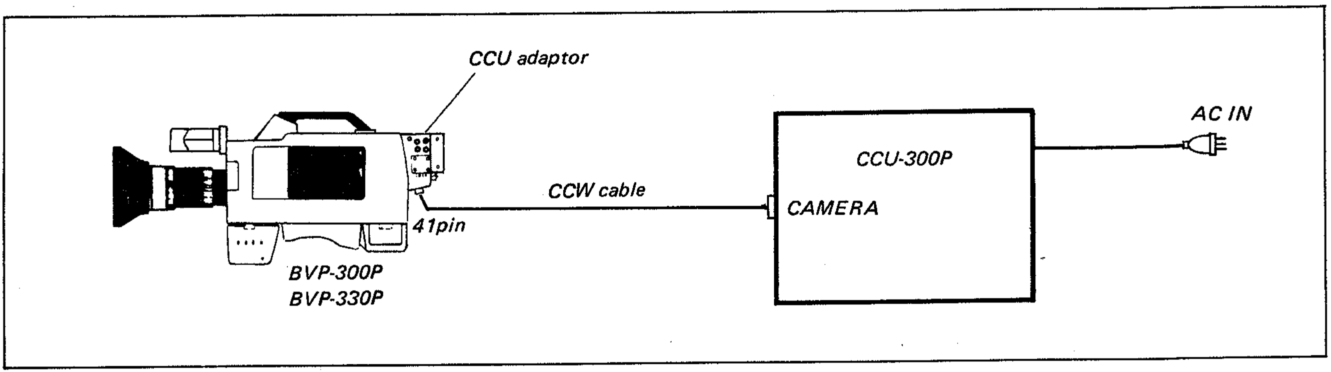

CCU adaptor
CCW cable
41pin
BVP-300P
BVP-330P
CCU-300P
CAMERA
AC IN

Fig. 3-1. Connection (1)

Connection (2)

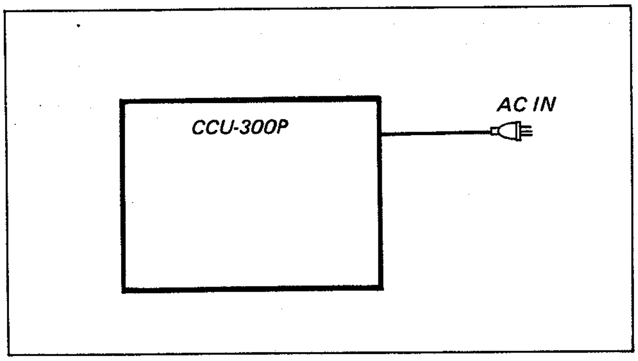

CCU-300P
AC IN

Fig. 3-2. Connection (2)

Illumination to the Test Chart

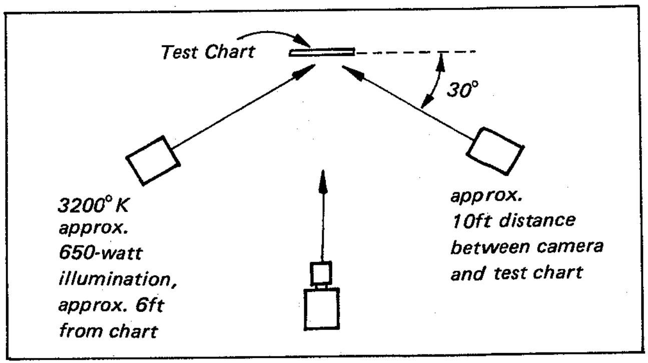

Test Chart
30°
3200°K
approx.
650-watt
illumination,
approx. 6ft
from chart
approx.
10ft distance
between camera
and test chart

Fig. 3-3. Illumination to the test chart

Mount the Test Chart on a wall or chart stand. The Test Chart must be evenly illuminated by 3200°K quartz lamp for approx. 2000 lux. The camera must be perpendicular to the chart. Center of the Test Chart and the center of the lens must be in the same heightness from floor. Use a level so that the level is placed on top of camera and adjust camera tilt for camera levelling.

3-4. POWER SUPPLY SYSTEM ADJUSTMENT

WARNING: Take care that High Tension (600 V) is appearing on the PW-47 board.

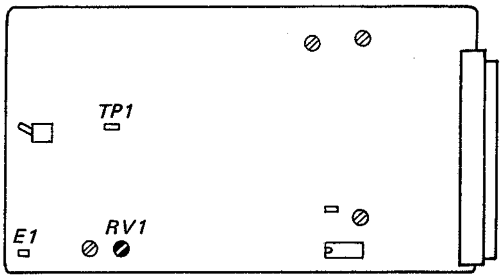
3-4-1. REG 9.5 V Adjustment

Connection; Same as Section 3-3, Connection (2)
Equipment; Digital Voltmeter

Extend the PW-47 board using the Extension Board.

Spec. and Adj.
TP1/PW-47 (GND: E1/PW-47)
⊘ RV1/PW-47
9.5 ± 0.01 V

PW-47 BOARD



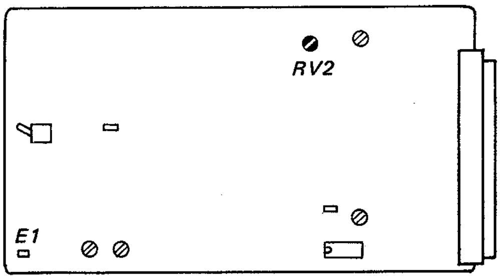
3-4-2. REG 9 V Adjustment

Connection; Same as Section 3-3, Connection (2)
Equipment; Digital Voltmeter

Extend the PW-47 board using the Extension Board.

Spec. and Adj.
TP19/Extension Board (GND: E1/PW-47)
⊘ RV2/PW-47
9.0 ± 0.01 V

PW-47 BOARD



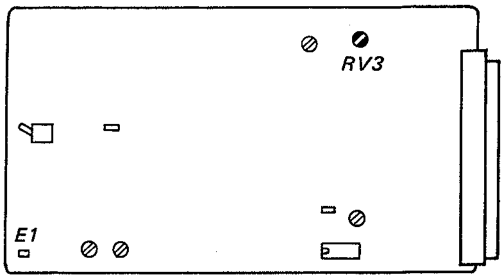
3-4-3. REG −9 V Adjustment

Connection; Same as Section 3-3, Connection (2)
Equipment; Digital Voltmeter

Extend the PW-47 board using the Extension Board.

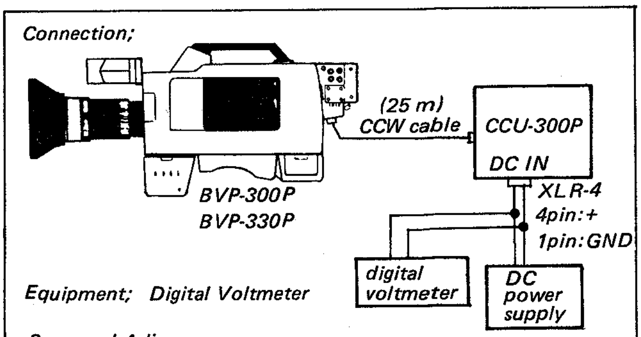
Spec. and Adj.
TP18/Extension Board (GND: E1/PW-47)
⊘ RV3/PW-47
−9.0 ± 0.01 V

PW-47 BOARD



3-4-4. Battery Alarm Adjustment

Connection;

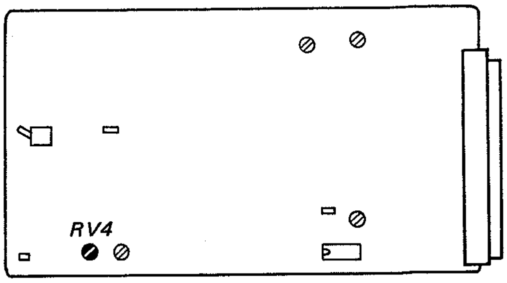


Equipment; Digital Voltmeter

Spec. and Adj.
Step 1. Extend the PW-47 board using the Extension board.
Step 2. BVP-300P POWER switch → OFF
CCU-300P POWER switch → ON
AC/DC switch/rear panel → DC
Step 3. DC Power Supply 10.8 ± 0.01 V
Step 4. Turn ⊘ RV4/PW-47 fully ↻.
Adjust ⊘ RV4 so that CCU POWER PILOT LAMP blinking starts.

Note: *After completing this adjustment; AC/DC switch/rear panel → AC.*

PW-47 BOARD



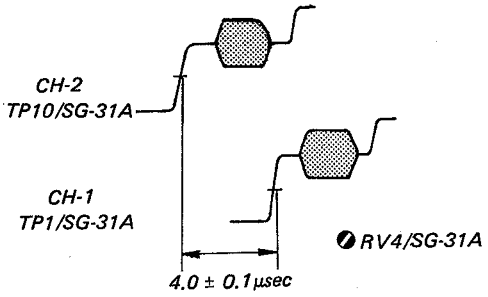
3-5. GENLOCK CONTROL SYSTEM ADJUSTMENT

3-5-1. H PHASE Control Calibration

Connection; Same as Section 3-3, Connection (1) except following:
Connect NTSC Color Video Signal out to GEN-LOCK IN connector on rear panel.
Equipment; Dual Trace Oscilloscope
Scope Mode; 1. Trig; TP11/SG-31A
2. Slope; –
3. Input; AC
4. ALT mode
Test Point; CH-1; TP1/SG-31A
CH-2; TP10/SG-31A (GND: E1/SG-31A)

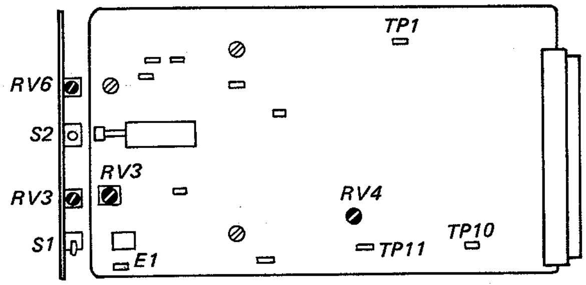
Extend the SG-31A board using Extension Board.

Spec. and Adj.
Step 1. Turn "H PHASE" (⊘ RV3/SG-31A) fully ↺ .
Step 2.


CH-2
TP10/SG-31A
CH-1
TP1/SG-31A
⊘ RV4/SG-31A
4.0 ± 0.1µsec

Step 3. After completing step 2;
"H PHASE" (⊘ RV3/SG-31A) → center position

SG-31A BOARD

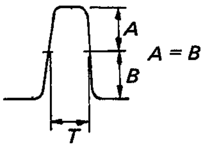

TP1
RV6
S2
RV3
RV3
RV4
S1
E1
TP11
TP10

3-5-2. Burst Gate Pulse Width Adjustment

Connection; Same as Section 3-5-1
Equipment; Oscilloscope

Extend the SG-31A board using Extension Board.

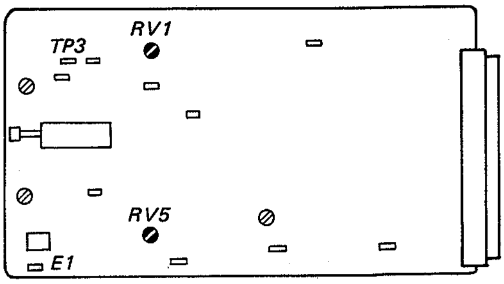
Spec. and Adj.



Step 1. TP3/SG-31A (GND: E1/SG-31A)
⊘ RV1/SG-31A
T = 3.3 ± 0.1µsec

Step 2. TP6/Extension Board (GND: E1/SG-31A)
⊘ RV5/SG-31A
T = 3.4 ± 0.1µsec

SG-31A BOARD

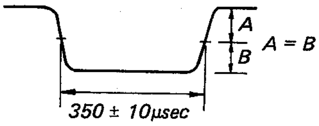

TP3
RV1
RV5
E1

3-5-3. Frame Gate Pulse Width Adjustment

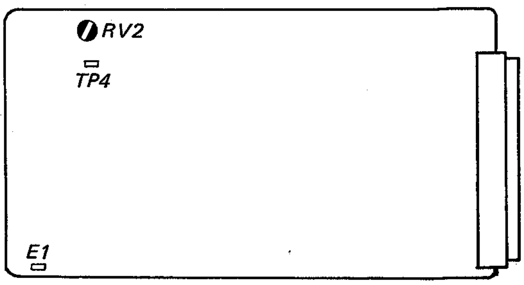
Connection; Same as Section 3-5-1
Equipment; Oscilloscope

Extend the SG-31A board using Extension Board.

Spec. and Adj.
TP4/SG-31A (GND: E1/SG-31A)
⊘ RV2/SG-31A


A
A = B
B
350 ± 10µsec

SG-31A BOARD



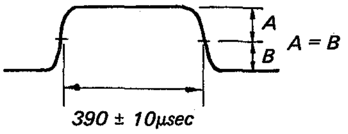
3-6. CAMERA CONTROL SYSTEM ADJUSTMENT

3-6-1. Data Latch Timing Adjustment

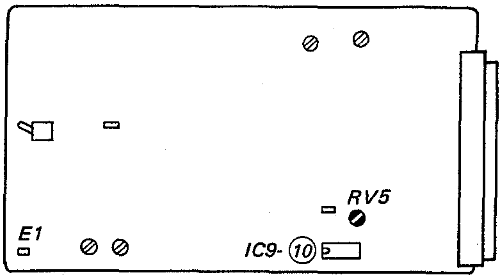
Connection; Same as Section 3-3, Connection (1)
Equipment; Oscilloscope

Extend the PW-47 board using Extension Board.

Spec. and Adj.
IC9- ⑩ pin/PW-47 (GND: E1/PW-47)
⊘ RV5/PW-47


A
B
A = B
390 ± 10μsec

PW-47 BOARD

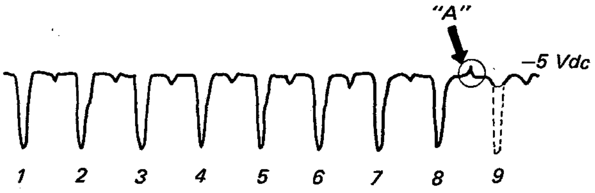


3-6-2. Latch Timing Pulse Width Adjustment

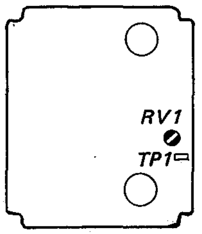
Connection; Same as Section 3-3, Connection (1)
Equipment; Oscilloscope

Spec. and Adj.
TP1/CO-5 (GND: chassis)

Adjust ⊘ RV1 so that a spike markd "A" is appeared between 8th and 9th pulse.


"A"
−5 Vdc
1
2
3
4
5
6
7
8
9

CO-5 BOARD

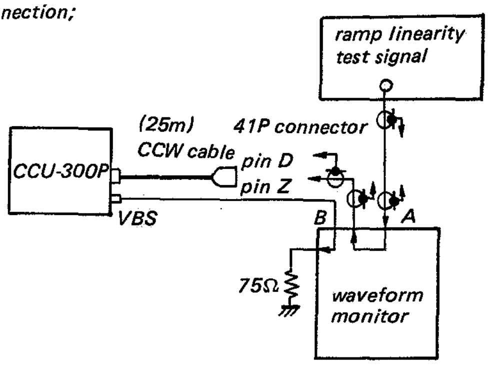


– COMPONENT SIDE –

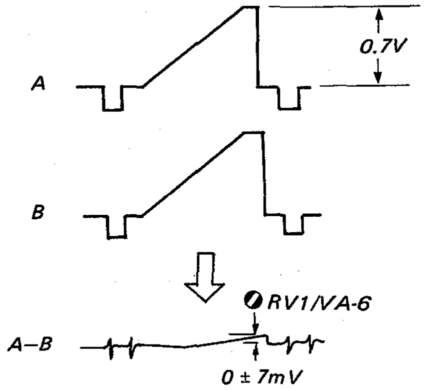
3-7. VIDEO (VBS/VB) CABLE COMPENSATOR SYSTEM ADJUSTMENT

3-7-1. Cable Compensator Gain (0m) Adjustment and DC Balance Set

Connection;

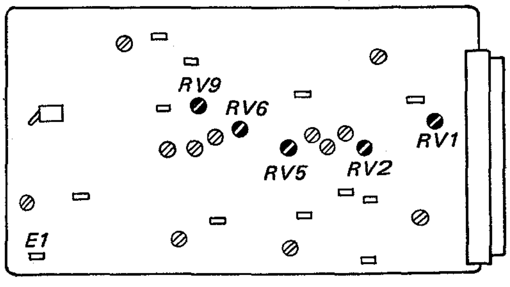

ramp linearity test signal
(25m) CCW cable
41P connector
pin D
pin Z
CCU-300P
VBS
B
A
75Ω
waveform monitor

Equipment; Waveform Monitor
Spec. and Adj.
Step 1. DC Balance Set
⊘ RV2/VA-6
⊘ RV6/VA-6
Set the ⊘ RV2 and ⊘ RV6 to the mechanical center position.
Step 2. Set the following controls;
⊘ RV5/VA-6; ⊖ position
⊘ RV9/VA-6; ⊖ position
CABLE COMP/front panel; 0m
Step 3. A; Ramp Linearity Test Signal } *A−B mode*
B; VBS out/Rear Panel


0.7V
A
B
⊘ RV1/VA-6
A−B
0 ± 7mV

Note: *After completing this adjustment, proceed to Section 3-7-4.*

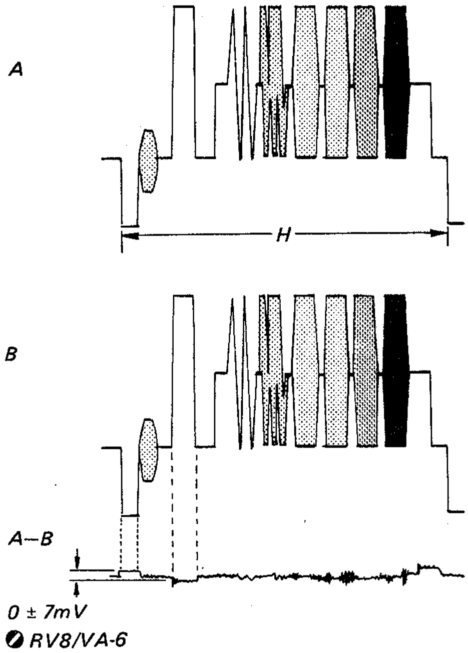
VA-6 BOARD


RV9
RV6
RV1
RV5
RV2
E1

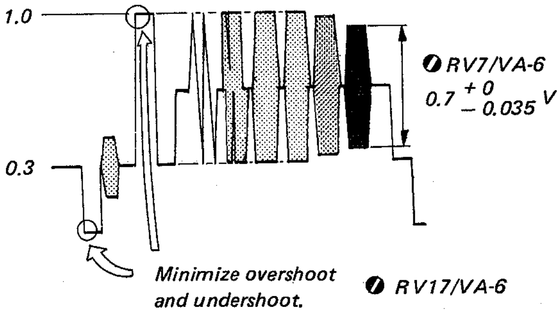
3-7-2. Cable Compensation (150m) Adjustment

Connection; Same as Section 3-7-1 except
CCW cable length and video signal
CCW Cable Length; 150m (50m + 100m)
Video Signal; PAL·Multiburst Signal
Equipment; Waveform Monitor

Spec. and Adj.
Step 1. Amplitude Adjustment
A Multiburst Signal } A-B
B VBS out/rear panel } mode


A
H
B
A–B
0 ± 7mV
⊘ RV8/VA-6

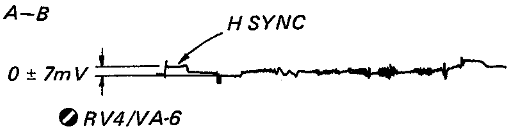
Step 2. Frequency Response Adjustment
Set the VOLTS FULL SCALE control of the waveform monitor to UNCALIBRATION, so that multiburst waveform as shown below is obtained on the waveform monitor screen.


1.0
0.3
⊘ RV7/VA-6
$0.7^{+0}_{-0.035}$ V
Minimize overshoot and undershoot.
⊘ RV17/VA-6

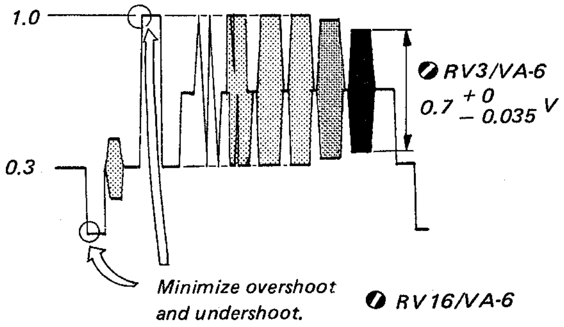
3-7-3. Cable Compensation (300m) Adjustment

Connection; Same as Section 3-7-2 except
CCW cable length
CCW Cable; 300m (100m + 100m + 100m)
Equipment; Waveform Monitor

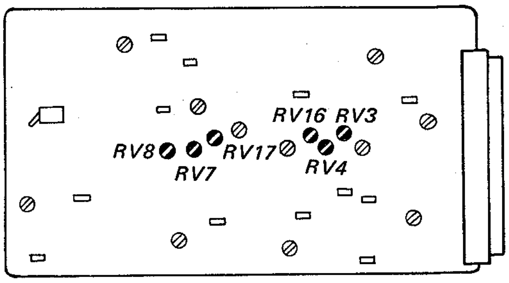
Spec. and Adj.
Step 1. Same as Section 3-7-2, Step 1 except ⊘


A–B
H SYNC
0 ± 7mV
⊘ RV4/VA-6

Step 2. Same as Section 3-7-2, Step 2 except ⊘

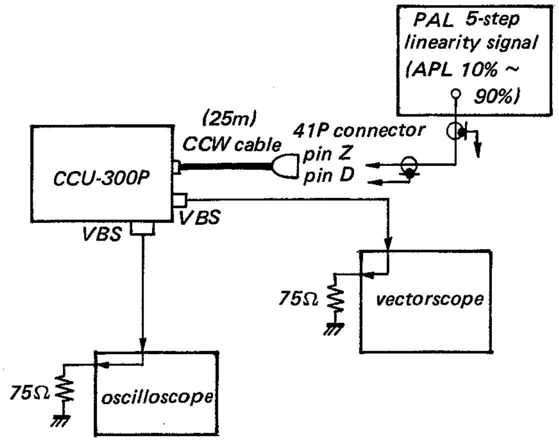

1.0
0.3
⊘ RV3/VA-6
$0.7^{+0}_{-0.035}$ V
Minimize overshoot and undershoot.
⊘ RV16/VA-6

VA-6 BOARD


RV16
RV3
RV8
RV17
RV7
RV4

3-7-4. DG Adjustment

Connection;



PAL 5-step linearity signal (APL 10% ~ 90%)
(25m) CCW cable
41P connector
pin Z
pin D
CCU-300P
VBS
VBS
75Ω
vectorscope
75Ω
oscilloscope

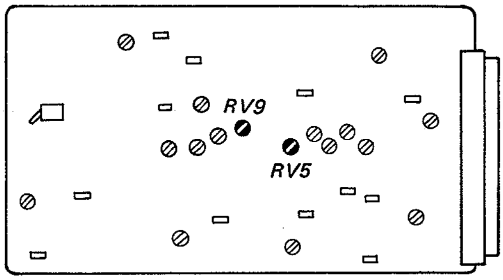
Equipment; Vectorscope
Oscilloscope

Spec. and Adj.

Step 1. DG Adjustment
APL = 10% ~ 90%
⊘ RV5/VA-6
DG = 0 ± 1 %

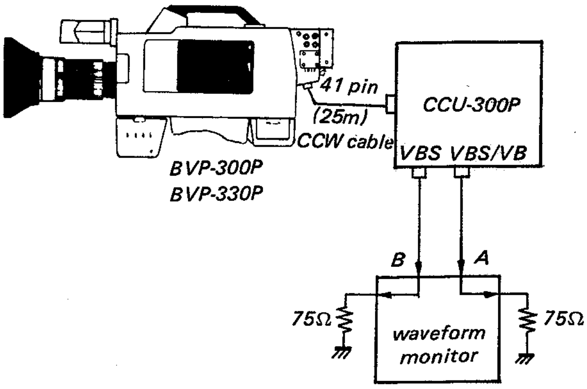
Step 2. DC Offset Adjustment
1. Disconnect the Signal Generator from CCU.
2. ⊘ RV9/VA-6
DC Offset = 0 ± 30 mVdc

VA-6 BOARD



3-7-5. VB Output Signal Adjustment

Connection;



41 pin
(25m)
CCW cable
BVP-300P
BVP-330P
CCU-300P
VBS VBS/VB
B
A
75Ω
waveform monitor
75Ω

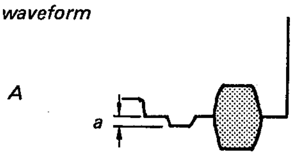
Equipment; Waveform Monitor

Spec. and Adj.

Step 1. Set the following switches;
MODE selector/front panel;
CAM/BARS/TEST ——► BARS
VIDEO OUT selector (S1/VA-6 board);
VBS/VB ——► VB

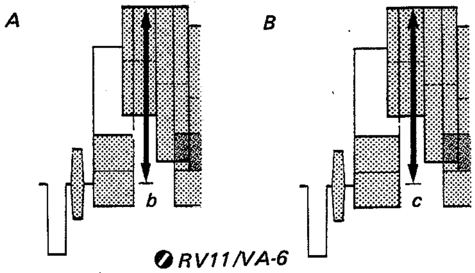
Step 2. Sync Reject Adjustment

VB waveform



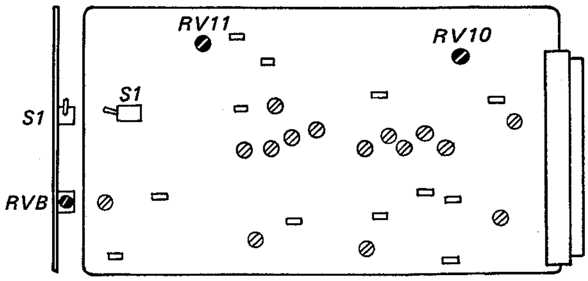
⊘ RV10/VA-6
a = 0 ± 17mV

Step 3. VB Level Adjustment



⊘ RV11/VA-6
b = c

VA-6 BOARD

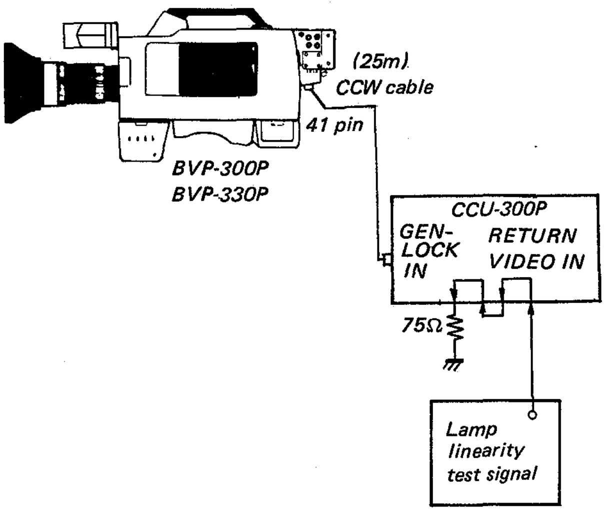


RV11
RV10
S1
S1
RVB

3-8. RETURN VIDEO AMP SYSTEM ADJUSTMENT

3-8-1. Return Video Level (VA-6 Board Input) Adjustment

Connection;


(25m)
CCW cable
41 pin
BVP-300P
BVP-330P
CCU-300P
GEN-LOCK IN
RETURN VIDEO IN
75Ω
Lamp linearity test signal

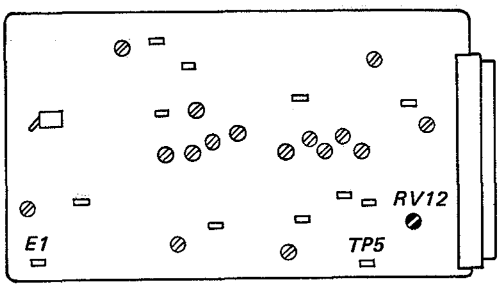
Equipment; Dual Trace Oscilloscope

Spec. and Adj.

Step 1. CH-1 TP4/Extension Board }
CH-2 TP5/VA-6 (GND; E-1/VA-6) } ALT mode
⊘ RV12/VA-6
CH-2 signal amplitude = CH-1 signal amplitude
difference of amplitude = 0 ± 30 mV

Step 2. Proceed to Section 3-8-2, after this adjustment step 1.

VA-6 BOARD



3-8-2. Return Video Output Level Adjustment

Connection; Same as Section 3-8-1.
Equipment; Dual Trace Oscilloscope

Spec. and Adj.

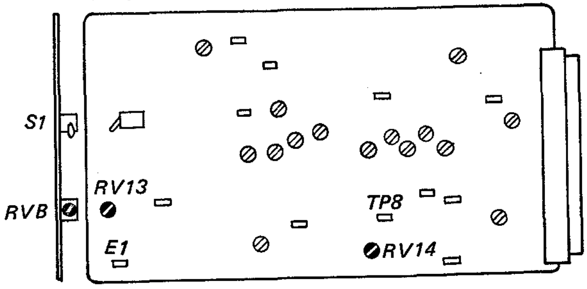
Step 1. Set the following control;
VF VIDEO MIX BALANCE (RV13/VA-6)
→ fully ↺

Step 2. CH-1 TP4/Extension Board }
CH-2 TP8/VA-6 (GND: E1/VA-6) } ALT mode

⊘ RV14/VA-6

CH-2 signal amplitude = CH-1 signal amplitude
difference of amplitude = 0 ± 30 mV

VA-6 BOARD


S1
RVB
RV13
E1
TP8
RV14

3-8-3. Return Video DC Offset Adjustment

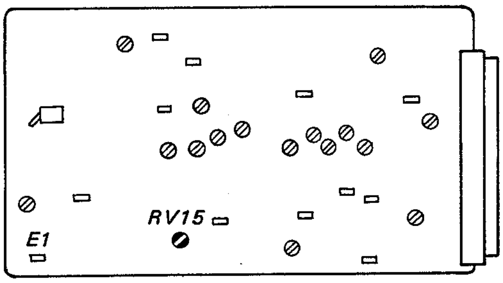
Connection; Same as Section 3-3, Connection (2)
Equipment; Oscilloscope

Extend the VA-6 board using the Extension Board.

Spec. and Adj.
TP2/Extension Board (GND: E1/VA-6)
⊘RV15/VA-6

DC Offset = 0 ± 30 mVdc

VA-6 BOARD

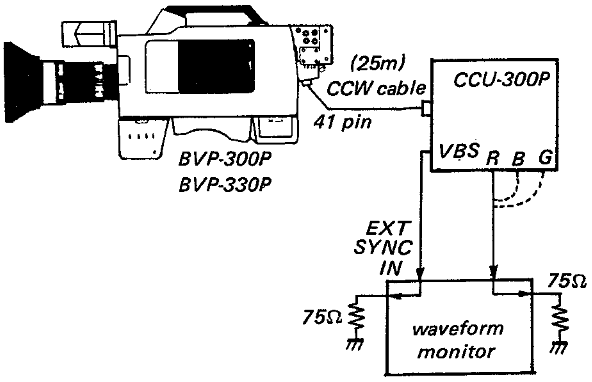


3-9. R•B•G VIDEO AMP SYSTEM ADJUSTMENT

3-9-1. R•B•G Gain Adjustment

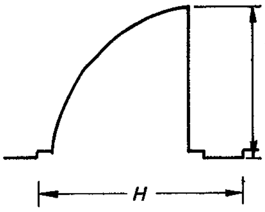
Note: The sec. 3-10-1 Pedestal Presetting (Step 1 ~ Step 6) should be completed before starting this adjustment.

Connection;


(25m)
CCW cable
41 pin
CCU-300P
VBS
R B G
BVP-300P
BVP-330P
EXT
SYNC
IN
75Ω
75Ω
waveform
monitor

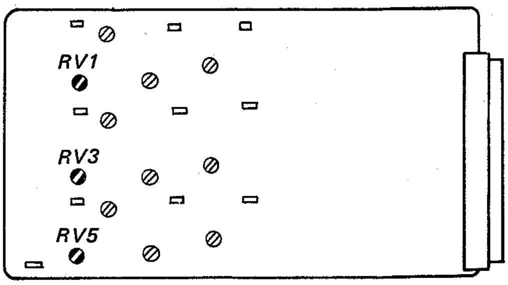
Equipment; Waveform Monitor

Spec. and Adj.
Step 1. Set the following switch;
MODE selector/front panel;
CAM/BARS/TEST ⟶ TEST
SYNC INT/EXT (Waveform Monitor) ⟶ EXT
Step 2.



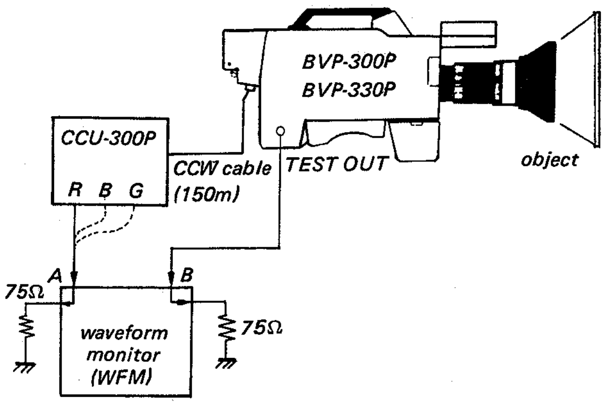
0.7 ± 0.021V
R: ⊘RV1/VA-5
B: ⊘RV3/VA-5
G: ⊘RV5/VA-5

VA-5 BOARD



3-9-2. R·B·G Cable Compensator (150m) Adjustment

Connection;

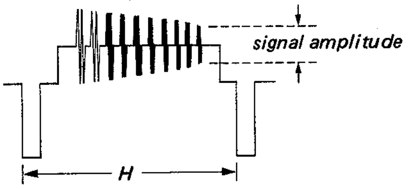


Equipment; Waveform Monitor
Object; In Mega Chart

Spec. and Adj.

Step 1. Set the following switches;
CABLE COMP selector/front panel → 150m
ENC/REG switch (CAMERA) → REG
R/B switch (CAMERA) → R
G/–G switch (CAMERA) → center position

Step 2. Input A (WFM): R VIDEO OUT/rear panel



⊘ RV8/VA-5
A signal amplitude = B signal amplitude

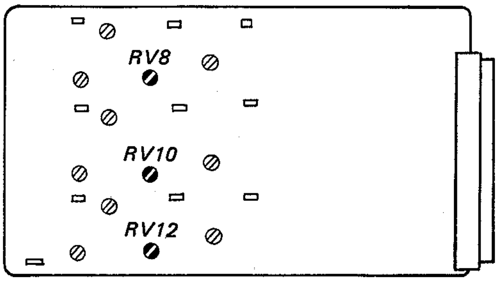
Step 3. Set the following switch;
R/B switch (CAMERA) → B

Step 4. Input A (WFM): B VIDEO OUT/rear panel
⊘ RV10/VA-5
A signal amplitude = B signal amplitude

Step 5. Set the following switch;
R/B switch (CAMERA) → conter position
G/–G switch (CAMERA) → G

Step 6. Input A (WFM): G VIDEO OUT/rear panel
⊘ RV12/VA-5
A signal amplitude = B signal amplitude

VA-5 BOARD



3-9-3. R·B·G Cable Compensator (300m) Adjustment

Connection; Same as Section 3-9-2 except CCW cable length
CCW cable; 300m (100m + 100m + 100m)
Equipment; Waveform Monitor
Object; In Mega Chart

Spec. and Adj.

Step 1. Set the following switches;
CABLE COMP selector/front panel → 300m
ENC/REG switch (CAMERA) → REG
R/B switch (CAMERA) → R
G/–G switch (CAMERA) → center position

Step 2. Input A (WFM): R VIDEO OUT/rear panel
⊘ RV7/VA-5
A signal amplitude = B signal amplitude

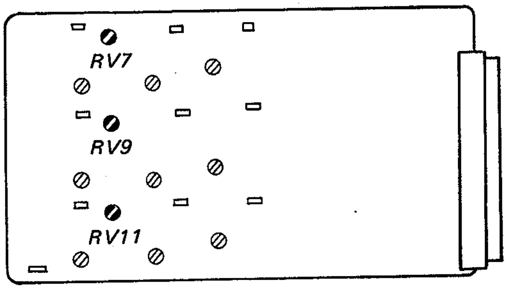
Step 3. Set the following switch;
R/B switch (CAMERA) → B

Step 4. Input A (WFM): B VIDEO OUT/rear panel
⊘ RV9/VA-5
A signal amplitude = B signal amplitude

Step 5. Set the following switch;
R/B switch (CAMERA) → center position
G/–G switch (CAMERA) → G

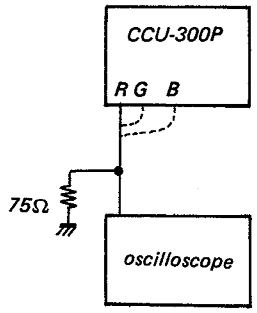
Step 6. Input A (WFM): G VIDEO OUT/rear panel
⊘ RV11/VA-5
A signal amplitude = B signal amplitude

VA-5 BOARD



3-9-4. R•B•G DC Offset Adjustment

Connection;



Equipment; Oscilloscope

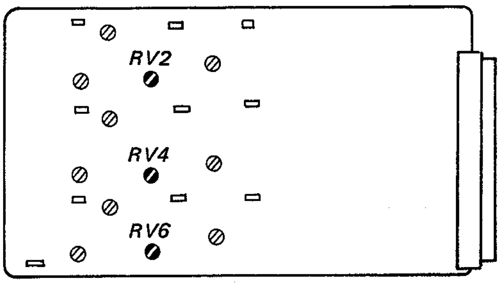
Spec. and Adj.

Step 1. Test Point; R VIDEO OUT/rear panel
⊘ RV2/VA-5
DC Offset = 0 ± 30 mVdc

Step 2. Test Point; B VIDEO OUT/rear panel
⊘ RV4/VA-5
DC Offset = 0 ± 30 mVdc

Step 3. Test Point; G VIDEO OUT/rear panel
⊘ RV6/VA-5
DC Offset = 0 ± 30 mV

VA-5 BOARD

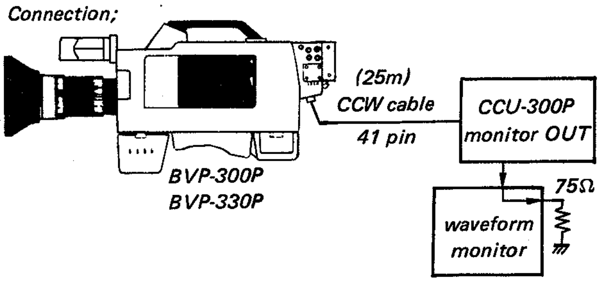


3-10. CONTROL PRESETTING

3-10-1. R•B Gain, Pedestal Presetting

Note: Pedestal and Gain Adjustment of Camera (BVP-300P/BVP-330P) should be completed before starting this adjustment.

Connection;



Equipment; Waveform Monitor

Spec. and Adj.

Step 1. Set the following switchs and iris;
W & B BAL selector/front panel → MAN
LENS IRIS/LENS → close
MONITOR OUT selector/front panel → G

Step 2. Adjust ⊘ MASTER PED/CCU so that pedestal level is 21mV on the waveform monitor screen.

Step 3. Set ⊘ R PED/front panel → center
Select MONITOR OUT selector/front panel → R

Step 4. Adjust ⊘ RV2/IF-29 so that pedestal level is 21mV on the waveform monitor screen.

Step 5. Set ⊘ B PED/front panel → center
Select MONITOR OUT selector/front panel → B

Step 6. Adjust ⊘ RV4/IF-29 so that pedestal level is 21mV on the waveform monitor screen.

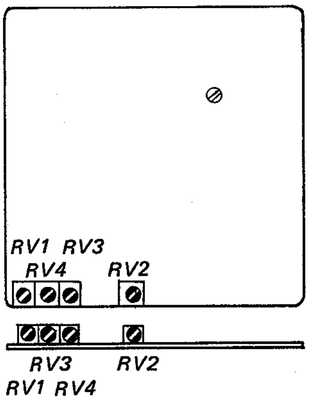
Step 7. MODE selector/front panel;
CAM/BARS/TEST → TEST
Set ⊘ R GAIN/front panel → center position
Select MONITOR OUT selector/front panel → R

Step 8. Adjust ⊘ RV1/IF-29 so that peak of TEST waveform is 700mV on the waveform monitor screen as shown below.

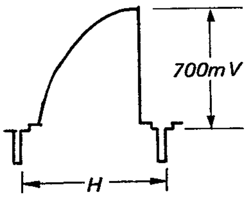
Step 9. Set ⊘ B GAIN/front panel → center position
Select MONITOR OUT selector/front panel → B

Step 10. Set ⊘ RV3/IF-29 so that peak of TEST waveform is 700mV

IF-29 BOARD

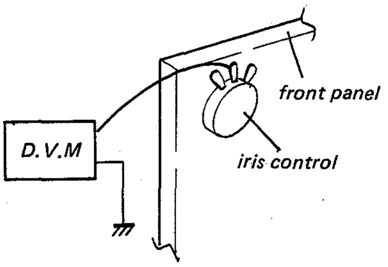


R: ⊘ RV1/IF-29
B: ⊘ RV3/IF-29



3-10-2. Low Iris Control Setting

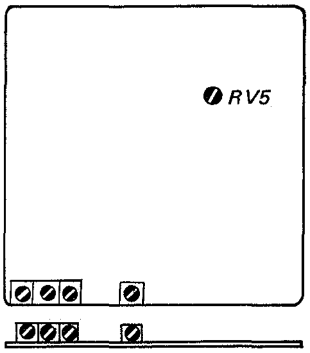
Connection;



Equipment; Digital Voltmeter

Spec. and Adj.
Step 1. Remove the three fixing screw of IF-29 board.
Then, RV5 will be discovered on the component side.
Step 2. Set IRIS control ——► fully ↺
Step 3. ⊘ RV5/IF-29
2.5 ± 0.05 Vdc

IF-29 BOARD (COMPONENT SIDE)



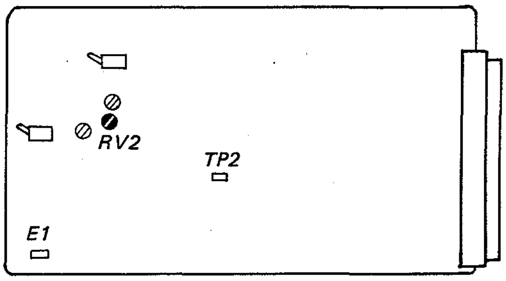
3-11. AUDIO SYSTEM ADJUSTMENT

3-11-1. Audio Amp Bias Setting

Connection; Same as Section 3-3, Connection (2)
Equipment; Oscilloscope

Spec. and Adj.
TP2/AU-14 (GND: E1/AU-14)
⊘ RV2/AU-14
0 ± 0.01 Vdc

AU-14 BOARD

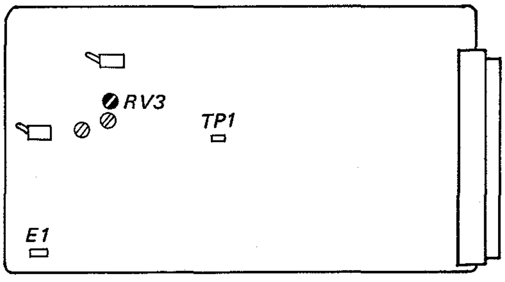


3-11-2. Audio Amp Idling Current Adjustment

Connection; Same as Section 3-3, Connection (2)
Equipment; Oscilloscope

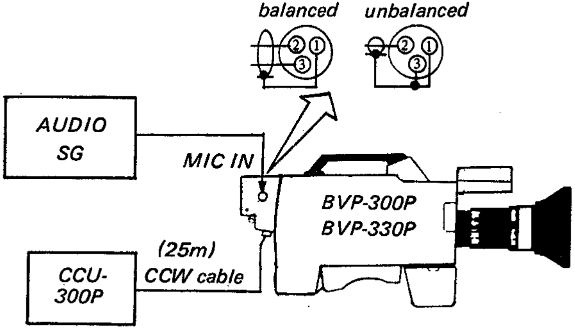
Spec. and Adj.
TP1/AU-14 (GND: E1/AU-14)
⊘ RV3/AU-14
40 ± 10 m Vdc

AU-14 BOARD



3-11-3. Audio Attenuator Adjustment

Connection;

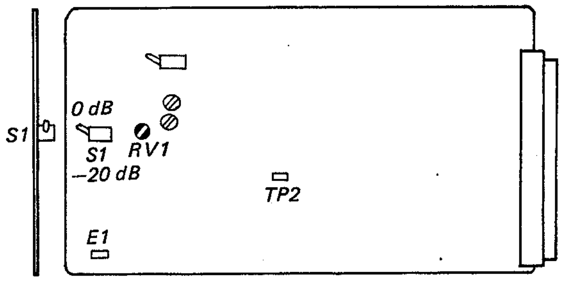

balanced
unbalanced
AUDIO SG
MIC IN
BVP-300P
BVP-330P
(25m)
CCW cable
CCU-300P

Equipment; Oscilloscope

Spec. and Adj.

Step 1. Set the following switch;
0 dB/–20 dB selector/AU-14 ⟶ 0 dB
Step 2. Adjust AUDIO SIGNAL GENERATOR OUTPUT LEVEL so that TP2/AU-14 is 1 Vp-p on the oscilloscope screen.
Step 3. 0 dB/–20 dB selector/AU-14 ⟶ –20 dB
Step 4. TP2/AU-14 (GND: E1/AU-14)
⊘ RV1/AU-14
0.1 ± 0.01 Vp-p

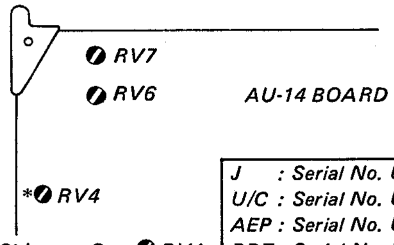
AU-14 BOARD


S1
0 dB
S1
RV1
–20 dB
TP2
E1

J	*: Serial No. 18101 and higher*
U/C	*: Serial No. 11901 and higher*
AEP	*: Serial No. 12701 and higher*
BRZ	*: Serial No. 10406 and higher*

3-11-4. Side Tone Setting

With a 2-wire INCOM system, this control adjusts the volume of the side tone.
*Adjust *⊘ RV-6, *⊘ RV-7/AU-14 so that the vioce of CAMERA-Headset become a suitable volume at the CCU-Headset.*


⊘ RV7
⊘ RV6
AU-14 BOARD
*⊘ RV4

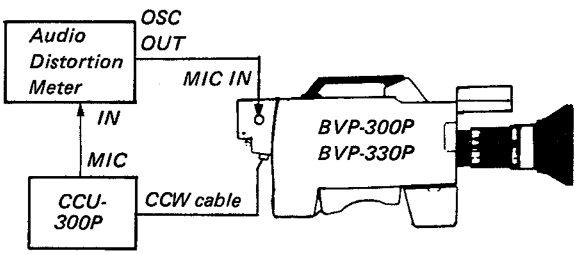
**Former Side-tone Set: ⊘ RV4*

J	*: Serial No. Up to 18100*
U/C	*: Serial No. Up to 11900*
AEP	*: Serial No. Up to 12700*
BRZ	*: Serial No. Up to 10405*

3-11-5. Mic Freq. & Level Adjustment

J	*: Serial No. 18101 and higher*
U/C	*: Serial No. 11901 and higher*
AEP	*: Serial No. 12701 and higher*
BRZ	*: Serial No. 10406 and higher*

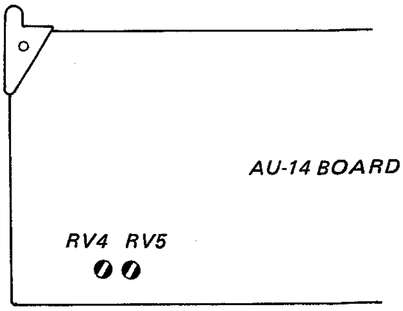
Connection;


Audio Distortion Meter
OSC OUT
MIC IN
IN
MIC
BVP-300P
BVP-330P
CCU-300P
CCW cable

Equipment; Audio Distortion Meter

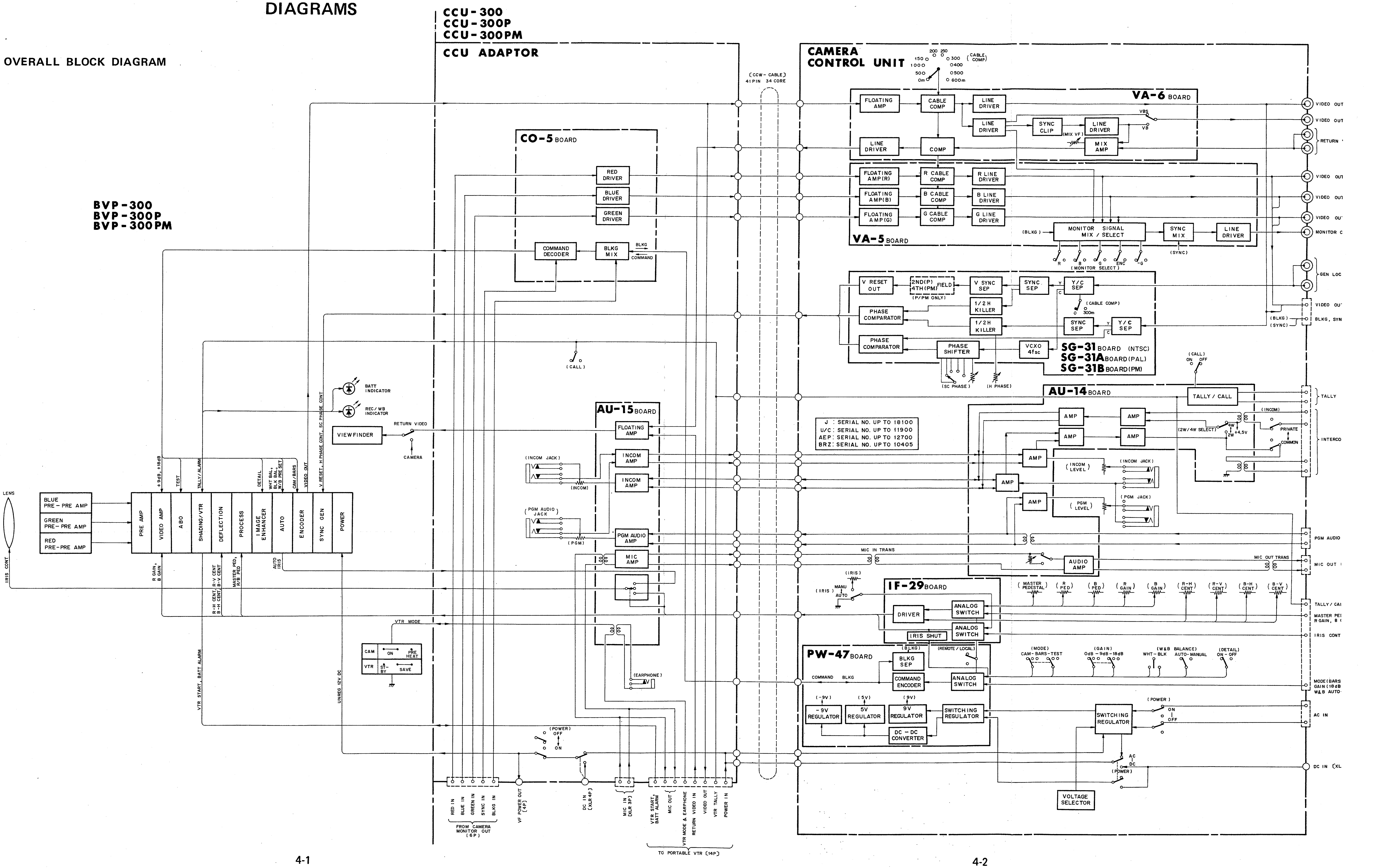
Adjustment

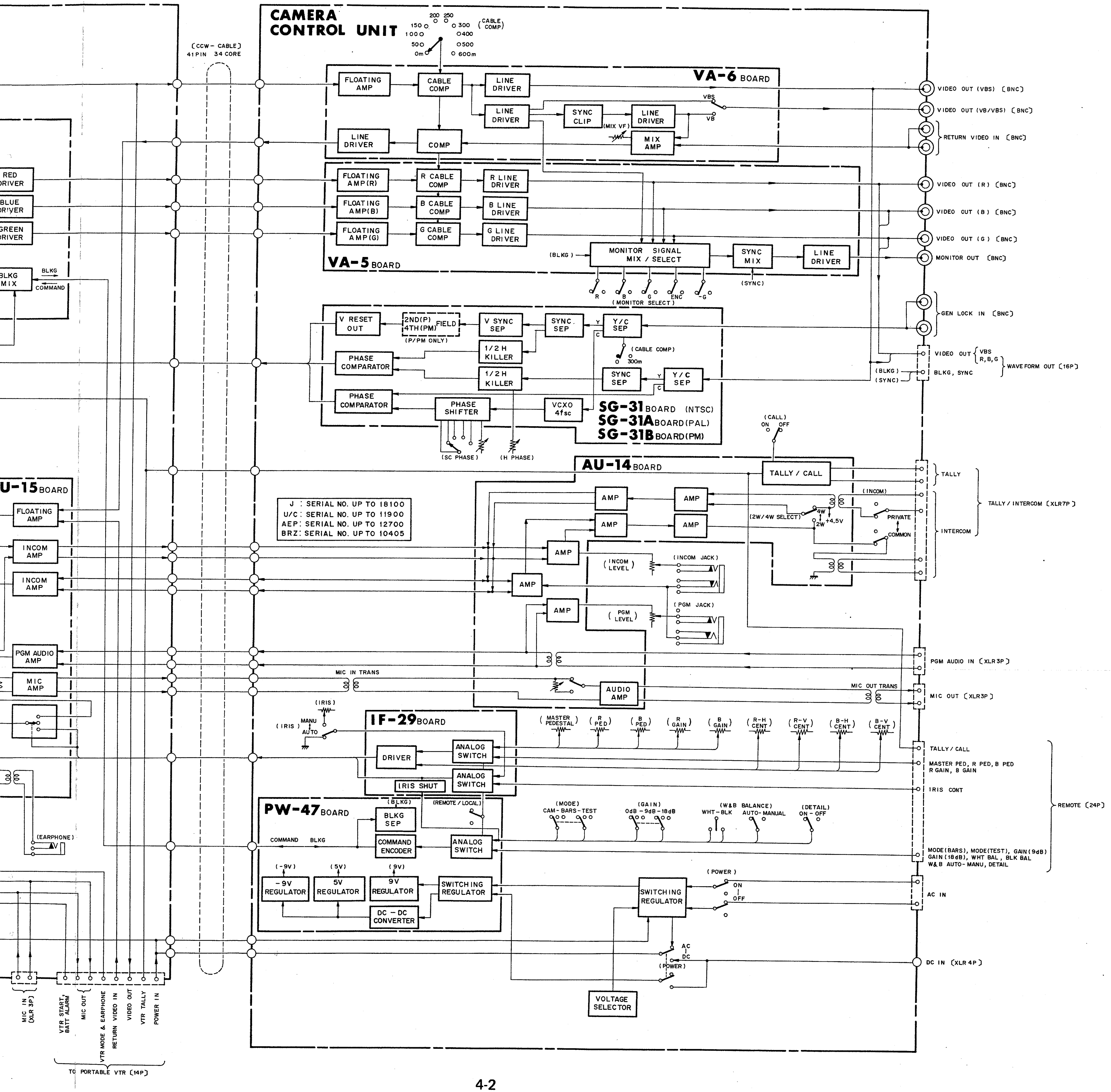
1. *Setting of Distortion Meter.*
   Step 1. FUNCTION: NOISE CAL
   Step 2. INPUT ATT: 20dB
   Step 3. METER RANGE: –10dB
   Step 4. FREQ. RANGE: 100
   Step 5. CAL CONTROL: Set –5dB on the meter scale.
   Step 6. FREQ. RANGE: 1 kHz
2. *Mic Freq. Adjustment of ⊘ RV4/AU-14*
   Step 7. Adjust –5dB on the meter scale.
3. *Setting of Distortion Meter.*
   Step 8. FUNCTION: LEVEL
4. *Mic Level Adjusmtnet of ⊘ RV5/AU-14*
   Step 9. Adjust –10dB on the meter scale.

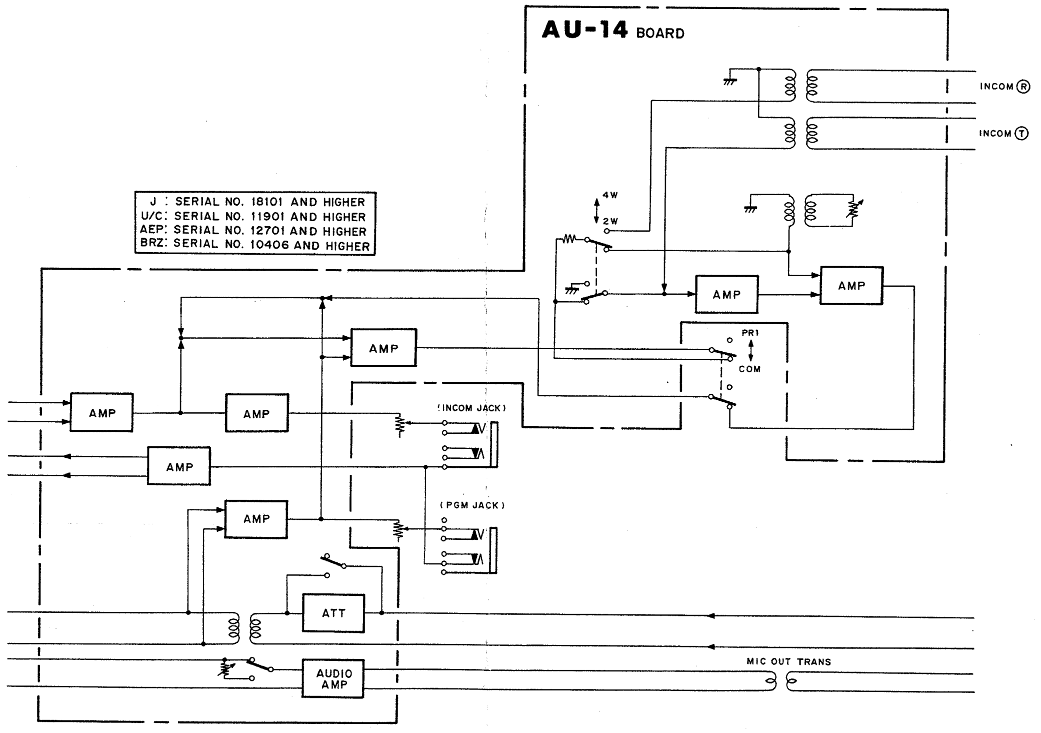

AU-14 BOARD
RV4
RV5

SECTION 4
DIAGRAMS

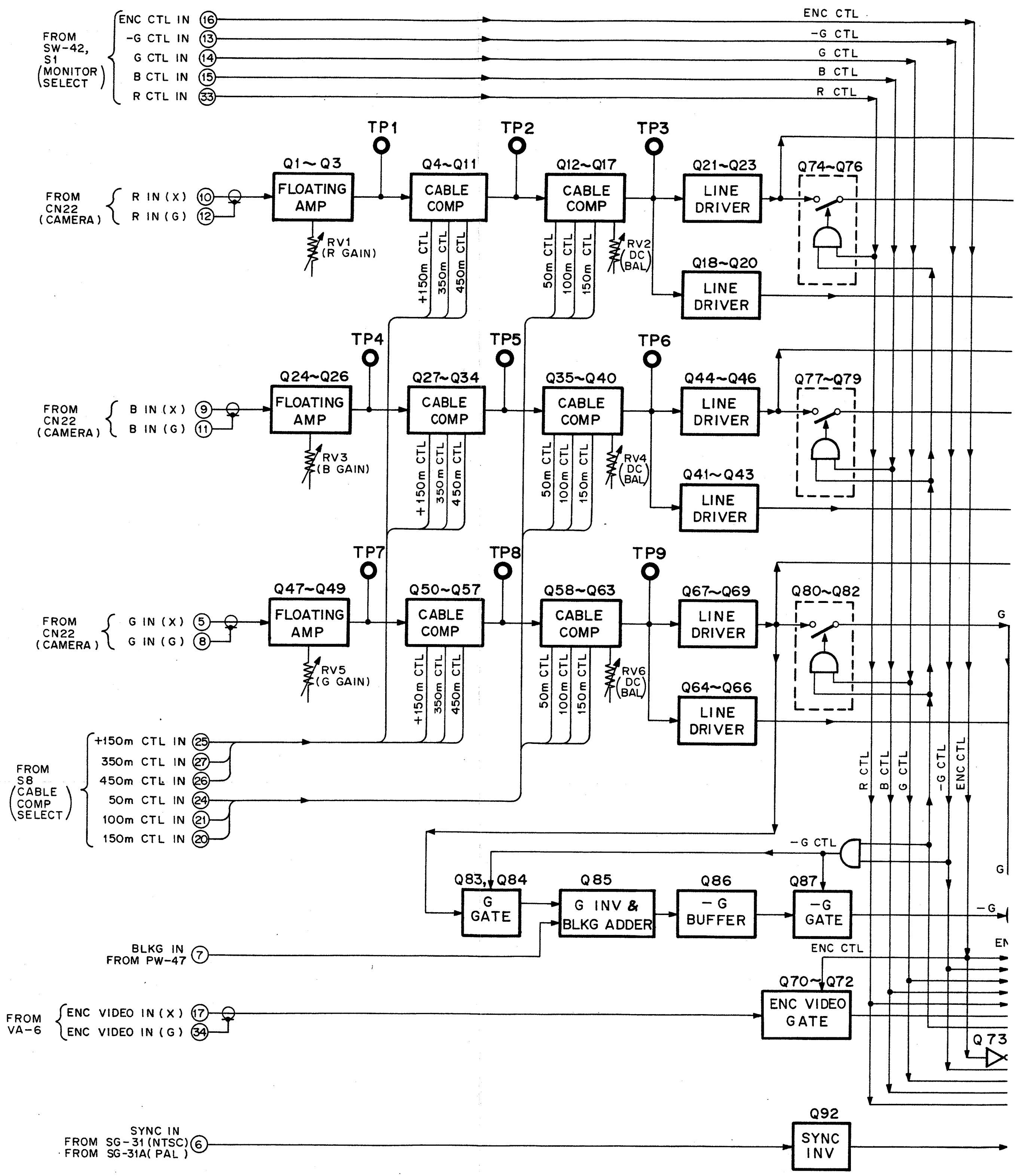
OVERALL BLOCK DIAGRAM


BVP-300
BVP-300P
BVP-300PM
LENS
IRIS CONT
BLUE PRE-PRE AMP
GREEN PRE-PRE AMP
RED PRE-PRE AMP
PRE AMP
VIDEO AMP
ABO
SHADING/VTR
DEFLECTION
PROCESS
IMAGE ENHANCER
AUTO
ENCODER
SYNC GEN
POWER
+9dB, +18dB
TEST
TALLY/ALARM
DETAIL
WHT BAL, BLK BAL, W/B PRE SET
CAM/BARS
VIDEO OUT
V RESET, H PHASE CONT, SC PHASE CONT
R GAIN, B GAIN
R-H CENT, R-V CENT, B-H CENT, B-V CENT
MASTER PED, R/B PED
AUTO IRIS
VTR START, BATT ALARM
UNREG 12V DC
BATT INDICATOR
REC/WB INDICATOR
VIEWFINDER
RETURN VIDEO
CAMERA
VTR MODE
CAM
ON
PRE HEAT
VTR
ST-BY
SAVE
CCU-300
CCU-300P
CCU-300PM
CCU ADAPTOR
CO-5 BOARD
RED DRIVER
BLUE DRIVER
GREEN DRIVER
COMMAND DECODER
BLKG MIX
BLKG
COMMAND
(CALL)
AU-15 BOARD
FLOATING AMP
INCOM AMP
(INCOM JACK)
(INCOM)
(PGM AUDIO JACK)
(PGM)
PGM AUDIO AMP
MIC AMP
(EARPHONE)
(POWER)
OFF
ON
RED IN
BLUE IN
GREEN IN
SYNC IN
BLKG IN
FROM CAMERA MONITOR OUT (6P)
VF POWER OUT (4P)
DC IN (XLR 4P)
MIC IN (XLR 3P)
VTR START, BATT ALARM
MIC OUT
VTR MODE & EARPHONE
RETURN VIDEO IN
VIDEO OUT
VTR TALLY
POWER IN
TO PORTABLE VTR (14P)
(CCW-CABLE)
41PIN 34CORE
CAMERA CONTROL UNIT
200 250
150
300
400
1000
500
500
0m
600m
(CABLE COMP)
VA-6 BOARD
FLOATING AMP
CABLE COMP
LINE DRIVER
LINE DRIVER
SYNC CLIP
LINE DRIVER
VBS
VB
(MIX VF)
MIX AMP
LINE DRIVER
COMP
VA-5 BOARD
FLOATING AMP(R)
FLOATING AMP(B)
FLOATING AMP(G)
R CABLE COMP
B CABLE COMP
G CABLE COMP
R LINE DRIVER
B LINE DRIVER
G LINE DRIVER
(BLKG)
MONITOR SIGNAL MIX / SELECT
SYNC MIX
LINE DRIVER
(SYNC)
R
B
G
ENC
-G
(MONITOR SELECT)
V RESET OUT
2ND(P) 4TH(PM) FIELD
(P/PM ONLY)
V SYNC SEP
SYNC SEP
Y
C
Y/C SEP
1/2H KILLER
1/2H KILLER
(CABLE COMP)
0
300m
SYNC SEP
Y/C SEP
PHASE COMPARATOR
PHASE COMPARATOR
PHASE SHIFTER
VCXO 4fsc
SG-31 BOARD (NTSC)
SG-31A BOARD (PAL)
SG-31B BOARD (PM)
(SC PHASE)
(H PHASE)
(CALL)
ON OFF
AU-14 BOARD
TALLY / CALL
AMP
(INCOM)
(2W/4W SELECT)
4W
2W
+4.5V
PRIVATE
COMMON
(INCOM LEVEL)
(INCOM JACK)
(PGM LEVEL)
(PGM JACK)
MIC IN TRANS
AUDIO AMP
MIC OUT TRANS
J : SERIAL NO. UP TO 18100
U/C : SERIAL NO. UP TO 11900
AEP : SERIAL NO. UP TO 12700
BRZ : SERIAL NO. UP TO 10405
(IRIS)
MANU
AUTO
IF-29 BOARD
DRIVER
ANALOG SWITCH
ANALOG SWITCH
IRIS SHUT
(MASTER PEDESTAL)
(R PED)
(B PED)
(R GAIN)
(B GAIN)
(R-H CENT)
(R-V CENT)
(B-H CENT)
(B-V CENT)
PW-47 BOARD
(BLKG)
BLKG SEP
(REMOTE / LOCAL)
COMMAND
BLKG
COMMAND ENCODER
ANALOG SWITCH
(MODE)
CAM-BARS-TEST
(GAIN)
0dB-9dB-18dB
(W&B BALANCE)
WHT-BLK AUTO-MANUAL
(DETAIL)
ON-OFF
(-9V)
(5V)
(9V)
-9V REGULATOR
5V REGULATOR
9V REGULATOR
SWITCHING REGULATOR
DC-DC CONVERTER
(POWER)
SWITCHING REGULATOR
ON
OFF
AC
DC
(POWER)
VOLTAGE SELECTOR
VIDEO OUT
VIDEO OUT
RETURN
VIDEO OUT
VIDEO OUT
VIDEO OU
MONITOR C
GEN LOC
VIDEO OU
(BLKG)
(SYNC)
BLKG, SYN
TALLY
INTERCO
PGM AUDIO
MIC OUT
TALLY/ CA
MASTER PE
R GAIN, B
IRIS CONT
MODE (BARS
GAIN (18dB
W&B AUTO
AC IN
DC IN (XL

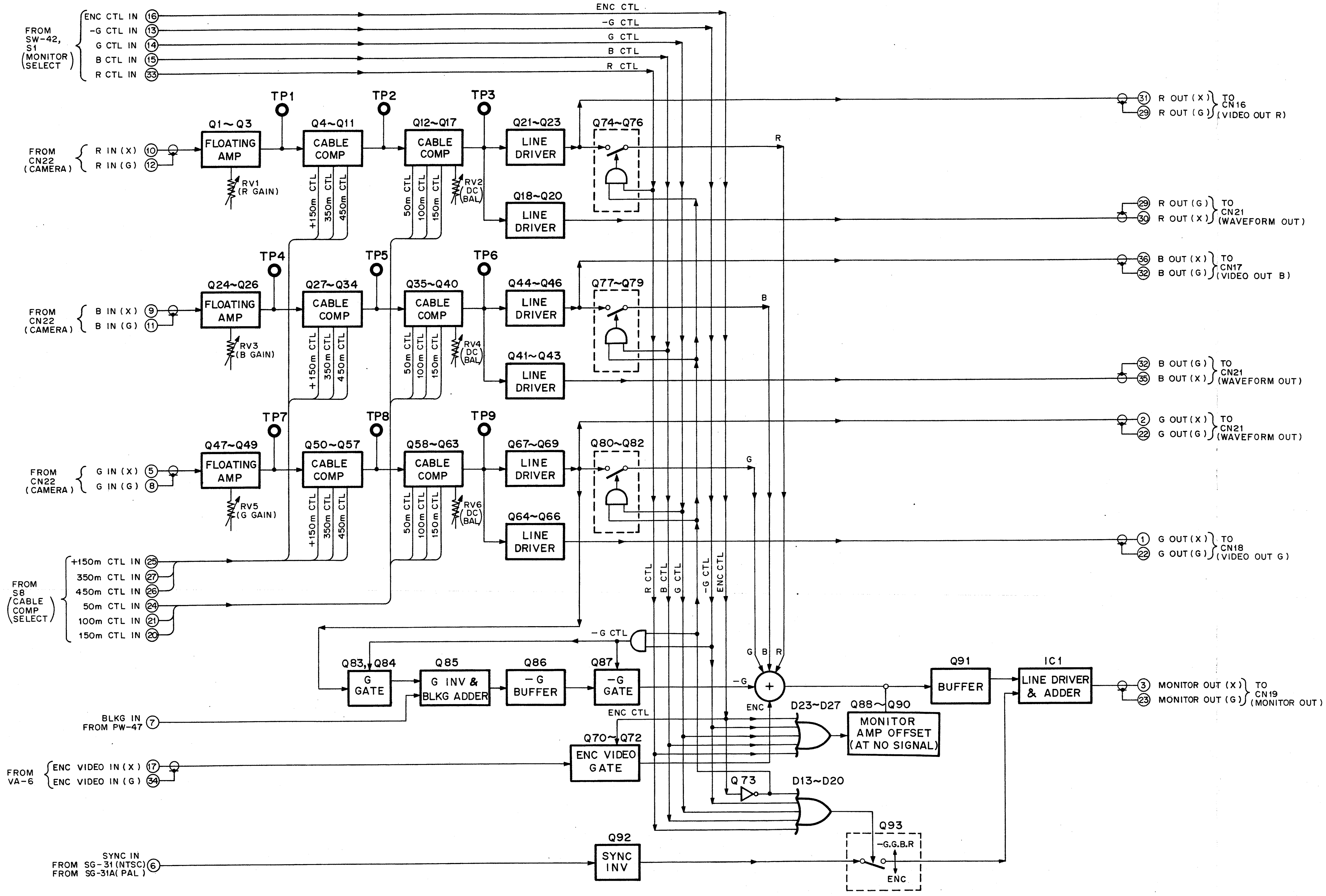

CAMERA CONTROL UNIT
150 200 250 300 400 500 600m 1000 500 0m (CABLE COMP)
(CCW-CABLE) 41PIN 34CORE
VA-6 BOARD
FLOATING AMP
CABLE COMP
LINE DRIVER
SYNC CLIP
MIX AMP
COMP
(MIX VF)
VBS
VB
VIDEO OUT (VBS) (BNC)
VIDEO OUT (VB/VBS) (BNC)
RETURN VIDEO IN (BNC)
FLOATING AMP(R)
FLOATING AMP(B)
FLOATING AMP(G)
R CABLE COMP
B CABLE COMP
G CABLE COMP
R LINE DRIVER
B LINE DRIVER
G LINE DRIVER
VA-5 BOARD
(BLKG)
MONITOR SIGNAL MIX / SELECT
SYNC MIX
(SYNC)
R B G ENC -G (MONITOR SELECT)
VIDEO OUT (R) (BNC)
VIDEO OUT (B) (BNC)
VIDEO OUT (G) (BNC)
MONITOR OUT (BNC)
RED DRIVER
BLUE DRIVER
GREEN DRIVER
BLKG MIX
BLKG
COMMAND
V RESET OUT
2ND(P) 4TH(PM) FIELD
(P/PM ONLY)
V SYNC SEP
SYNC. SEP
Y/C SEP
1/2H KILLER
PHASE COMPARATOR
(CABLE COMP)
300m
SYNC SEP
PHASE SHIFTER
VCXO 4fsc
SG-31 BOARD (NTSC)
SG-31A BOARD (PAL)
SG-31B BOARD (PM)
(SC PHASE)
(H PHASE)
GEN LOCK IN (BNC)
VIDEO OUT VBS R,B,G
(BLKG)
(SYNC)
BLKG, SYNC
WAVE FORM OUT (16P)
(CALL) ON OFF
TALLY / CALL
AU-14 BOARD
AU-15 BOARD
FLOATING AMP
INCOM AMP
PGM AUDIO AMP
MIC AMP
J : SERIAL NO. UP TO 18100
U/C: SERIAL NO. UP TO 11900
AEP: SERIAL NO. UP TO 12700
BRZ: SERIAL NO. UP TO 10405
AMP
(INCOM)
(2W/4W SELECT)
4W 2W +4.5V
PRIVATE
COMMON
TALLY
INTERCOM
TALLY / INTERCOM (XLR7P)
(INCOM LEVEL)
(INCOM JACK)
(PGM LEVEL)
(PGM JACK)
PGM AUDIO IN (XLR3P)
MIC IN TRANS
MIC OUT TRANS
AUDIO AMP
MIC OUT (XLR3P)
(IRIS)
MANU AUTO
IF-29 BOARD
DRIVER
ANALOG SWITCH
IRIS SHUT
(MASTER PEDESTAL)
(R PED)
(B PED)
(R GAIN)
(B GAIN)
(R-H CENT)
(R-V CENT)
(B-H CENT)
(B-V CENT)
TALLY / CALL
MASTER PED, R PED, B PED R GAIN, B GAIN
IRIS CONT
REMOTE (24P)
PW-47 BOARD
(BLKG)
(REMOTE / LOCAL)
BLKG SEP
COMMAND BLKG
COMMAND ENCODER
(MODE) CAM-BARS-TEST
(GAIN) 0dB -9dB -18dB
(W&B BALANCE) WHT-BLK AUTO-MANUAL
(DETAIL) ON - OFF
MODE(BARS), MODE(TEST), GAIN(9dB) GAIN(18dB), WHT BAL, BLK BAL W&B AUTO-MANU, DETAIL
(-9V) -9V REGULATOR
(5V) 5V REGULATOR
(9V) 9V REGULATOR
SWITCHING REGULATOR
DC - DC CONVERTER
(POWER) ON OFF
AC IN
AC DC (POWER)
VOLTAGE SELECTOR
DC IN (XLR 4P)
(EARPHONE)
MIC IN (XLR 3P)
VTR START BATT ALARM
MIC OUT
VTR MODE & EARPHONE
RETURN VIDEO IN
VIDEO OUT
VTR TALLY
POWER IN
TO PORTABLE VTR (14P)


AU-14 BOARD
INCOM (R)
INCOM (T)
J : SERIAL NO. 18101 AND HIGHER
U/C: SERIAL NO. 11901 AND HIGHER
AEP: SERIAL NO. 12701 AND HIGHER
BRZ: SERIAL NO. 10406 AND HIGHER
4W
2W
AMP
PR1
COM
(INCOM JACK)
(PGM JACK)
ATT
MIC OUT TRANS
AUDIO AMP

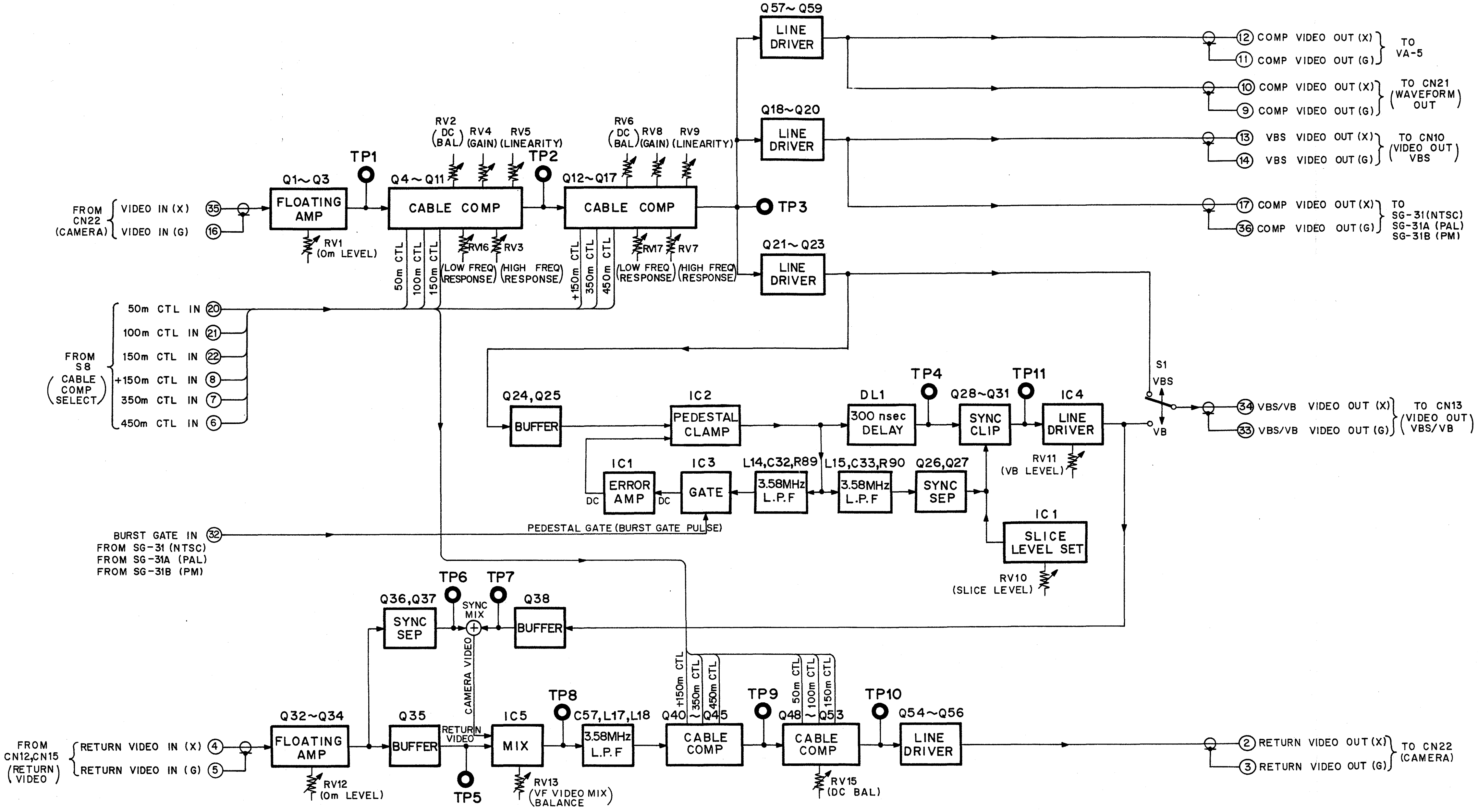
R, G, B CABLE COMPENSATOR BLOCK DIAGRAM
VA-5 BOARD


FROM SW-42, S1 (MONITOR SELECT)
ENC CTL IN ⑯
-G CTL IN ⑬
G CTL IN ⑭
B CTL IN ⑮
R CTL IN ㉝
ENC CTL
-G CTL
G CTL
B CTL
R CTL
TP1
TP2
TP3
Q1~Q3
FLOATING AMP
Q4~Q11
CABLE COMP
Q12~Q17
CABLE COMP
Q21~Q23
LINE DRIVER
Q74~Q76
Q18~Q20
LINE DRIVER
FROM CN22 (CAMERA)
R IN (X) ⑩
R IN (G) ⑫
RV1 (R GAIN)
+150m CTL
350m CTL
450m CTL
50m CTL
100m CTL
150m CTL
RV2 (DC BAL)
TP4
TP5
TP6
Q24~Q26
FLOATING AMP
Q27~Q34
CABLE COMP
Q35~Q40
CABLE COMP
Q44~Q46
LINE DRIVER
Q77~Q79
Q41~Q43
LINE DRIVER
FROM CN22 (CAMERA)
B IN (X) ⑨
B IN (G) ⑪
RV3 (B GAIN)
RV4 (DC BAL)
TP7
TP8
TP9
Q47~Q49
FLOATING AMP
Q50~Q57
CABLE COMP
Q58~Q63
CABLE COMP
Q67~Q69
LINE DRIVER
Q80~Q82
Q64~Q66
LINE DRIVER
FROM CN22 (CAMERA)
G IN (X) ⑤
G IN (G) ⑧
RV5 (G GAIN)
RV6 (DC BAL)
G
FROM S8 (CABLE COMP SELECT)
+150m CTL IN ㉕
350m CTL IN ㉗
450m CTL IN ㉖
50m CTL IN ㉔
100m CTL IN ㉑
150m CTL IN ⑳
R CTL
B CTL
G CTL
-G CTL
ENC CTL
-G CTL
G
Q83, Q84
G GATE
Q85
G INV & BLKG ADDER
Q86
-G BUFFER
Q87
-G GATE
-G
EN
BLKG IN FROM PW-47 ⑦
ENC CTL
Q70~Q72
ENC VIDEO GATE
FROM VA-6
ENC VIDEO IN (X) ⑰
ENC VIDEO IN (G) ㉞
Q73
Q92
SYNC INV
SYNC IN
FROM SG-31 (NTSC)
FROM SG-31A (PAL) ⑥

R, G, B CABLE COMPENSATOR BLOCK DIAGRAM
VA-5 BOARD

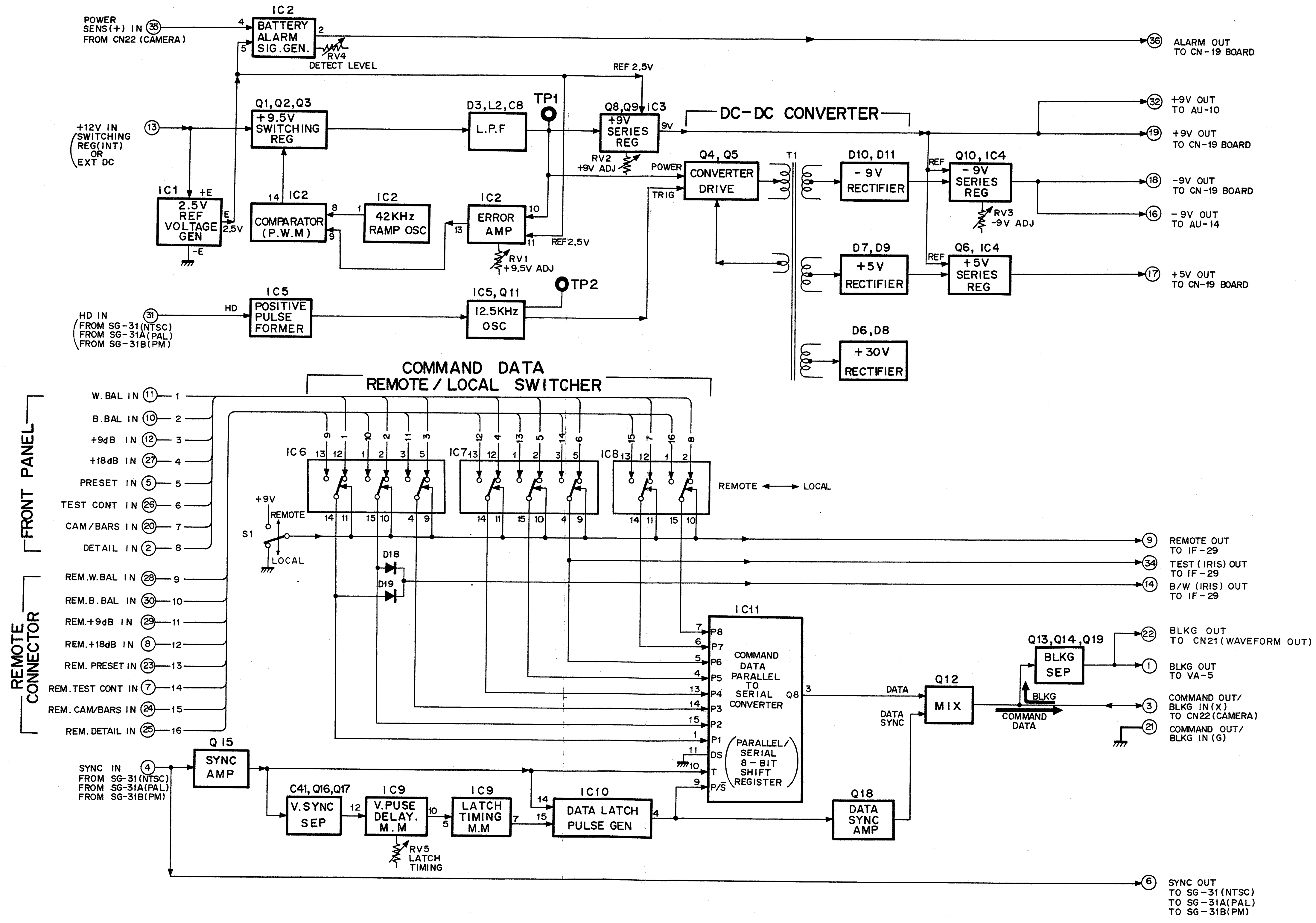

FROM SW-42, S1 (MONITOR SELECT)
ENC CTL IN ⑯
-G CTL IN ⑬
G CTL IN ⑭
B CTL IN ⑮
R CTL IN ㉝
ENC CTL
-G CTL
G CTL
B CTL
R CTL
FROM CN22 (CAMERA)
R IN (X) ⑩
R IN (G) ⑫
TP1
TP2
TP3
Q1~Q3
FLOATING AMP
RV1 (R GAIN)
Q4~Q11
CABLE COMP
+150m CTL
350m CTL
450m CTL
Q12~Q17
CABLE COMP
50m CTL
100m CTL
150m CTL
RV2 (DC BAL)
Q21~Q23
LINE DRIVER
Q18~Q20
LINE DRIVER
Q74~Q76
R
R OUT (X) ㉛
R OUT (G) ㉙
TO CN16 (VIDEO OUT R)
R OUT (G) ㉙
R OUT (X) ㉚
TO CN21 (WAVEFORM OUT)
FROM CN22 (CAMERA)
B IN (X) ⑨
B IN (G) ⑪
TP4
TP5
TP6
Q24~Q26
FLOATING AMP
RV3 (B GAIN)
Q27~Q34
CABLE COMP
Q35~Q40
CABLE COMP
RV4 (DC BAL)
Q44~Q46
LINE DRIVER
Q41~Q43
LINE DRIVER
Q77~Q79
B
B OUT (X) ㊱
B OUT (G) ㉜
TO CN17 (VIDEO OUT B)
B OUT (G) ㉜
B OUT (X) ㉟
TO CN21 (WAVEFORM OUT)
FROM CN22 (CAMERA)
G IN (X) ⑤
G IN (G) ⑧
TP7
TP8
TP9
Q47~Q49
FLOATING AMP
RV5 (G GAIN)
Q50~Q57
CABLE COMP
Q58~Q63
CABLE COMP
RV6 (DC BAL)
Q67~Q69
LINE DRIVER
Q64~Q66
LINE DRIVER
Q80~Q82
G
G OUT (X) ②
G OUT (G) ㉒
TO CN21 (WAVEFORM OUT)
G OUT (X) ①
G OUT (G) ㉒
TO CN18 (VIDEO OUT G)
FROM S8 (CABLE COMP SELECT)
+150m CTL IN ㉕
350m CTL IN ㉗
450m CTL IN ㉖
50m CTL IN ㉔
100m CTL IN ㉑
150m CTL IN ⑳
R CTL
B CTL
G CTL
-G CTL
ENC CTL
-G CTL
Q83, Q84
G GATE
Q85
G INV & BLKG ADDER
Q86
-G BUFFER
Q87
-G GATE
G B R
-G
+
ENC
Q91
BUFFER
IC1
LINE DRIVER & ADDER
MONITOR OUT (X) ③
MONITOR OUT (G) ㉓
TO CN19 (MONITOR OUT)
BLKG IN FROM PW-47 ⑦
ENC CTL
D23~D27
Q88~Q90
MONITOR AMP OFFSET (AT NO SIGNAL)
Q70~Q72
ENC VIDEO GATE
FROM VA-6
ENC VIDEO IN (X) ⑰
ENC VIDEO IN (G) ㉞
Q73
D13~D20
Q93
-G.G.B.R
ENC
Q92
SYNC INV
SYNC IN FROM SG-31 (NTSC) FROM SG-31A (PAL) ⑥

VIDEO (VBS) CABLE COMPENSATOR BLOCK DIAGRAM
VA-6 BOARD

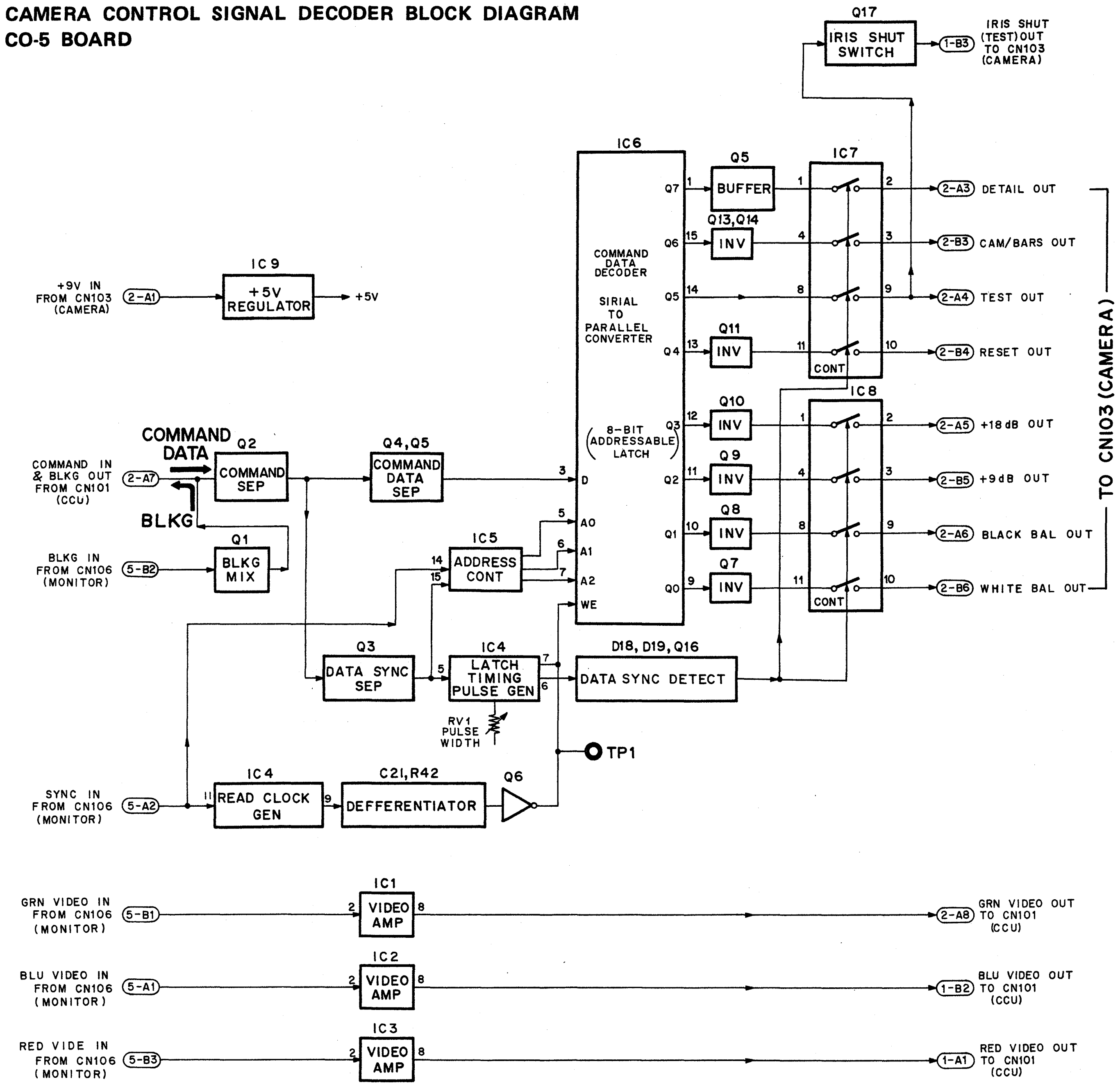


FROM CN22 (CAMERA)
VIDEO IN (X) ㉟
VIDEO IN (G) ⑯
Q1~Q3
FLOATING AMP
RV1 (0m LEVEL)
TP1
RV2 (DC BAL)
RV4 (GAIN)
RV5 (LINEARITY)
TP2
Q4~Q11
CABLE COMP
50m CTL
100m CTL
150m CTL
RV16
RV3
(LOW FREQ RESPONSE)
(HIGH FREQ RESPONSE)
RV6 (DC BAL)
RV8 (GAIN)
RV9 (LINEARITY)
Q12~Q17
CABLE COMP
+150m CTL
350m CTL
450m CTL
RV17
RV7
(LOW FREQ RESPONSE)
(HIGH FREQ RESPONSE)
TP3
Q57~Q59
LINE DRIVER
Q18~Q20
LINE DRIVER
Q21~Q23
LINE DRIVER
⑫ COMP VIDEO OUT (X)
⑪ COMP VIDEO OUT (G)
TO VA-5
⑩ COMP VIDEO OUT (X)
⑨ COMP VIDEO OUT (G)
TO CN21 (WAVEFORM OUT)
⑬ VBS VIDEO OUT (X)
⑭ VBS VIDEO OUT (G)
TO CN10 (VIDEO OUT VBS)
⑰ COMP VIDEO OUT (X)
㊱ COMP VIDEO OUT (G)
TO SG-31 (NTSC) SG-31A (PAL) SG-31B (PM)
FROM S8 (CABLE COMP SELECT)
50m CTL IN ⑳
100m CTL IN ㉑
150m CTL IN ㉒
+150m CTL IN ⑧
350m CTL IN ⑦
450m CTL IN ⑥
Q24,Q25
BUFFER
IC2
PEDESTAL CLAMP
DL1
300 nsec DELAY
TP4
Q28~Q31
SYNC CLIP
TP11
IC4
LINE DRIVER
S1
VBS
VB
RV11 (VB LEVEL)
㉞ VBS/VB VIDEO OUT (X)
㉝ VBS/VB VIDEO OUT (G)
TO CN13 (VIDEO OUT VBS/VB)
IC1
ERROR AMP
DC
DC
IC3
GATE
L14,C32,R89
3.58MHz L.P.F
L15,C33,R90
3.58MHz L.P.F
Q26,Q27
SYNC SEP
IC1
SLICE LEVEL SET
RV10 (SLICE LEVEL)
BURST GATE IN ㉜
FROM SG-31 (NTSC)
FROM SG-31A (PAL)
FROM SG-31B (PM)
PEDESTAL GATE (BURST GATE PULSE)
TP6
TP7
Q36,Q37
SYNC SEP
SYNC MIX
Q38
BUFFER
CAMERA VIDEO
FROM CN12,CN15 (RETURN VIDEO)
RETURN VIDEO IN (X) ④
RETURN VIDEO IN (G) ⑤
Q32~Q34
FLOATING AMP
RV12 (0m LEVEL)
Q35
BUFFER
RETURN VIDEO
TP5
IC5
MIX
RV13 (VF VIDEO MIX BALANCE)
TP8
C57,L17,L18
3.58MHz L.P.F
Q40~Q45
+150m CTL
350m CTL
450m CTL
CABLE COMP
TP9
Q48~Q53
50m CTL
100m CTL
150m CTL
CABLE COMP
RV15 (DC BAL)
TP10
Q54~Q56
LINE DRIVER
② RETURN VIDEO OUT (X)
③ RETURN VIDEO OUT (G)
TO CN22 (CAMERA)

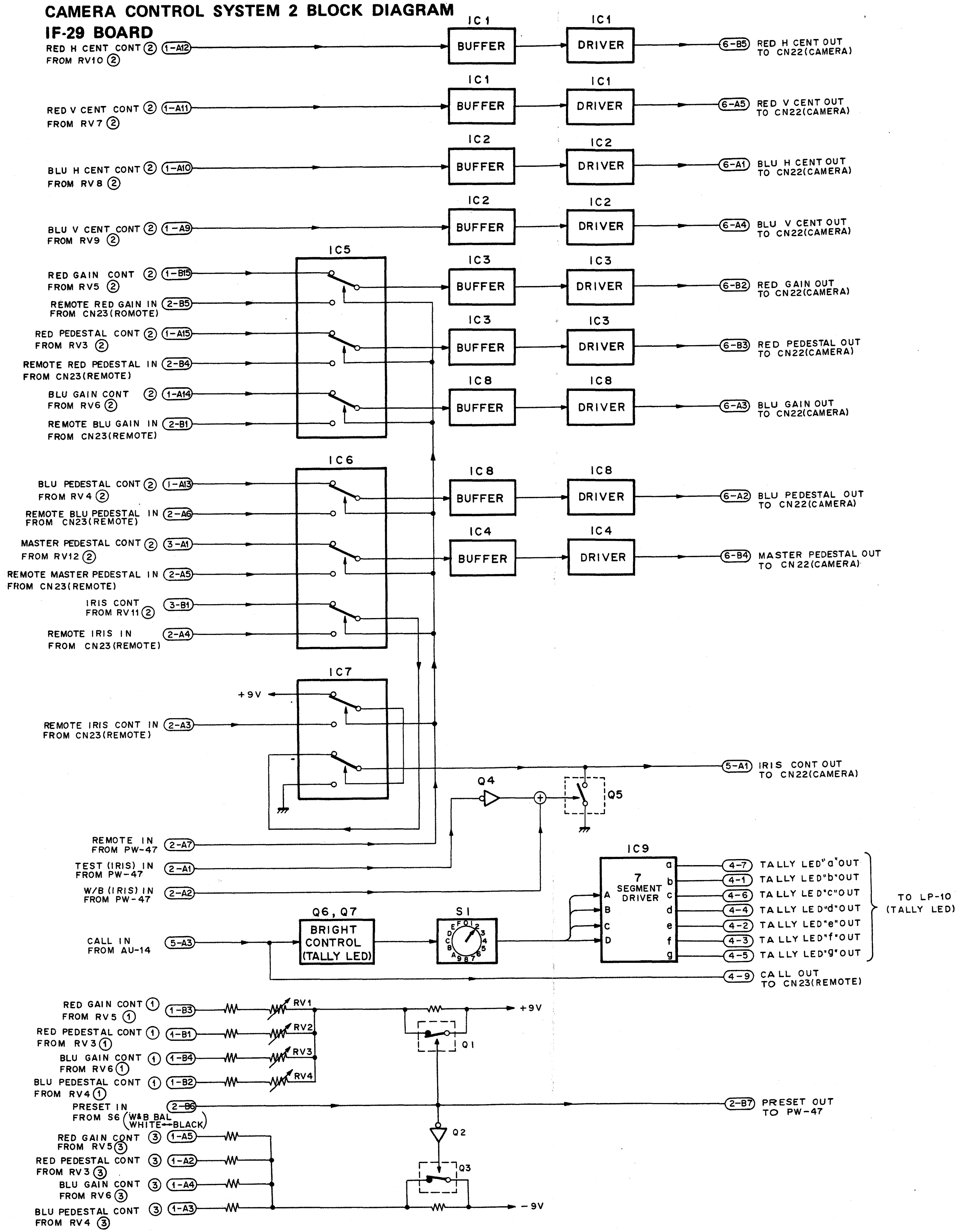
POWER SUPPLY AND CAMERA CONTROL SYSTEM 1 BLOCK DIAGRAM
PW-47 BOARD


POWER SENS(+) IN ㉟ FROM CN22 (CAMERA)
IC2
BATTERY ALARM SIG.GEN.
RV4 DETECT LEVEL
ALARM OUT TO CN-19 BOARD ㊱
REF 2.5V
+12V IN ⑬ SWITCHING REG(INT) OR EXT DC
Q1,Q2,Q3
+9.5V SWITCHING REG
D3,L2,C8
L.P.F
TP1
Q8,Q9,IC3
+9V SERIES REG
9V
RV2 +9V ADJ
DC-DC CONVERTER
+9V OUT TO AU-10 ㉜
+9V OUT TO CN-19 BOARD ⑲
IC1
2.5V REF VOLTAGE GEN
+E
-E
2.5V
IC2
COMPARATOR (P.W.M)
IC2
42KHz RAMP OSC
IC2
ERROR AMP
RV1 +9.5V ADJ
REF2.5V
Q4, Q5
CONVERTER DRIVE
POWER
TRIG
T1
D10, D11
- 9V RECTIFIER
Q10, IC4
- 9V SERIES REG
REF
RV3 -9V ADJ
-9V OUT TO CN-19 BOARD ⑱
- 9V OUT TO AU-14 ⑯
D7, D9
+5V RECTIFIER
Q6, IC4
+5V SERIES REG
+5V OUT TO CN-19 BOARD ⑰
D6, D8
+30V RECTIFIER
HD IN ㉛ FROM SG-31(NTSC) FROM SG-31A(PAL) FROM SG-31B(PM)
HD
IC5
POSITIVE PULSE FORMER
IC5, Q11
12.5KHz OSC
TP2
COMMAND DATA REMOTE / LOCAL SWITCHER
FRONT PANEL
W. BAL IN ⑪ 1
B.BAL IN ⑩ 2
+9dB IN ⑫ 3
+18dB IN ㉗ 4
PRESET IN ⑤ 5
TEST CONT IN ㉖ 6
CAM/BARS IN ⑳ 7
DETAIL IN ② 8
REMOTE CONNECTOR
REM.W.BAL IN ㉘ 9
REM.B.BAL IN ㉚ 10
REM.+9dB IN ㉙ 11
REM.+18dB IN ⑧ 12
REM. PRESET IN ㉓ 13
REM.TEST CONT IN ⑦ 14
REM. CAM/BARS IN ㉔ 15
REM. DETAIL IN ㉕ 16
IC6
IC7
IC8
REMOTE ←→ LOCAL
+9V
REMOTE
S1
LOCAL
D18
D19
REMOTE OUT TO IF-29 ⑨
TEST (IRIS) OUT TO IF-29 ㉞
B/W (IRIS) OUT TO IF-29 ⑭
IC11
COMMAND DATA PARALLEL TO SERIAL CONVERTER
(PARALLEL/ SERIAL 8-BIT SHIFT REGISTER)
P8 P7 P6 P5 P4 P3 P2 P1 DS T P/S̄ Q8
DATA
DATA SYNC
Q12
MIX
Q13,Q14,Q19
BLKG SEP
BLKG
COMMAND DATA
BLKG OUT TO CN21 (WAVEFORM OUT) ㉒
BLKG OUT TO VA-5 ①
COMMAND OUT/ BLKG IN(X) TO CN22(CAMERA) ③
COMMAND OUT/ BLKG IN (G) ㉑
Q 15
SYNC AMP
SYNC IN ④ FROM SG-31(NTSC) FROM SG-31A(PAL) FROM SG-31B(PM)
C41, Q16,Q17
V.SYNC SEP
IC9
V.PUSE DELAY. M.M
RV5 LATCH TIMING
IC9
LATCH TIMING M.M
IC10
DATA LATCH PULSE GEN
Q18
DATA SYNC AMP
SYNC OUT TO SG-31 (NTSC) TO SG-31A(PAL) TO SG-31B(PM) ⑥

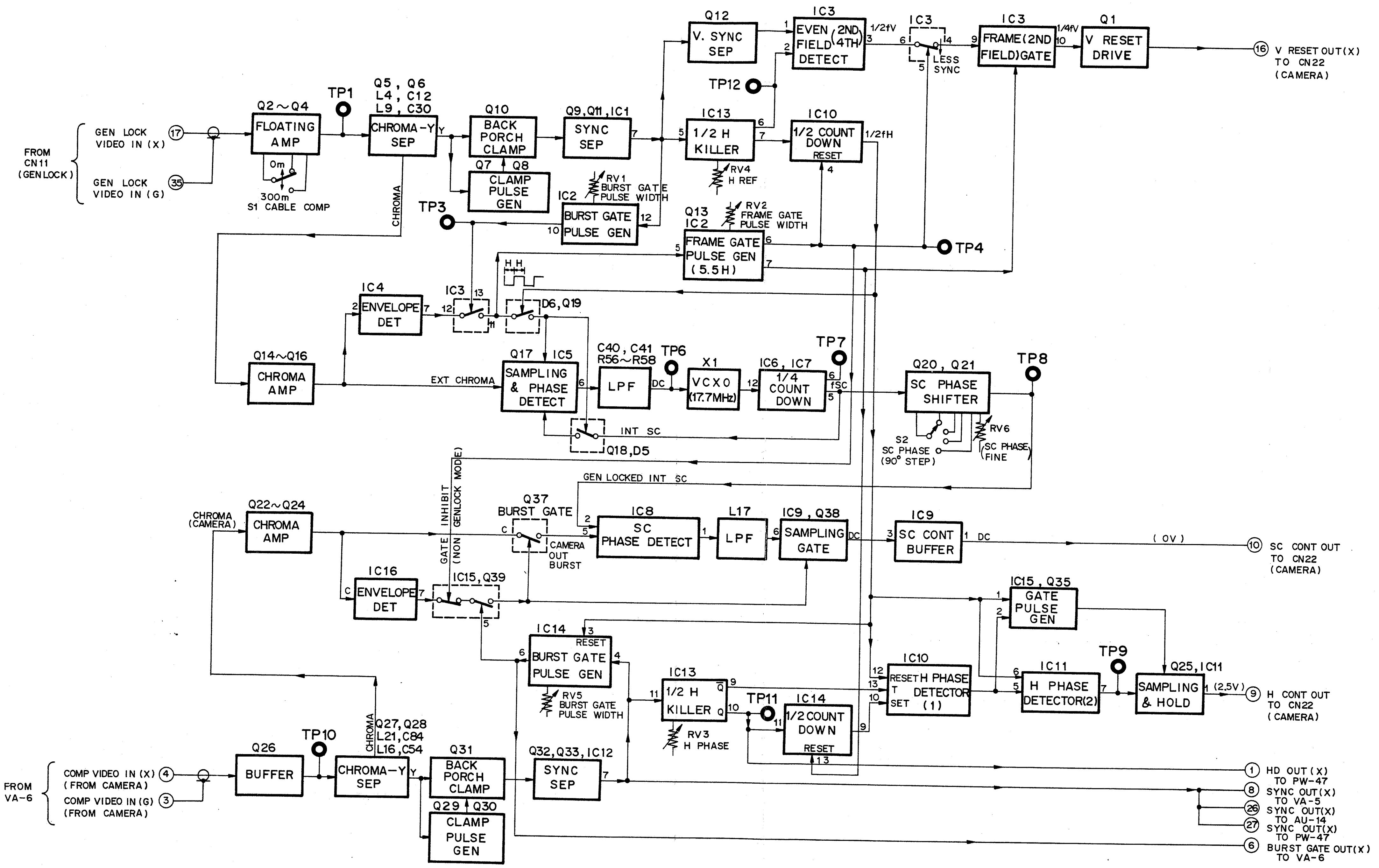
CAMERA CONTROL SIGNAL DECODER BLOCK DIAGRAM
CO-5 BOARD


Q17
IRIS SHUT SWITCH
1-B3 IRIS SHUT (TEST) OUT TO CN103 (CAMERA)
IC6
COMMAND DATA DECODER
SIRIAL TO PARALLEL CONVERTER
(8-BIT ADDRESSABLE LATCH)
Q7 Q6 Q5 Q4 Q3 Q2 Q1 Q0
D A0 A1 A2 WE
Q5 BUFFER
Q13,Q14 INV
Q11 INV
Q10 INV
Q9 INV
Q8 INV
Q7 INV
IC7
IC8
CONT
2-A3 DETAIL OUT
2-B3 CAM/BARS OUT
2-A4 TEST OUT
2-B4 RESET OUT
2-A5 +18dB OUT
2-B5 +9dB OUT
2-A6 BLACK BAL OUT
2-B6 WHITE BAL OUT
TO CN103 (CAMERA)
+9V IN FROM CN103 (CAMERA) 2-A1
IC9 +5V REGULATOR
+5V
COMMAND DATA
COMMAND IN & BLKG OUT FROM CN101 (CCU) 2-A7
Q2 COMMAND SEP
BLKG
Q4,Q5 COMMAND DATA SEP
Q1 BLKG MIX
BLKG IN FROM CN106 (MONITOR) 5-B2
IC5 ADDRESS CONT
Q3 DATA SYNC SEP
IC4 LATCH TIMING PULSE GEN
RV1 PULSE WIDTH
D18, D19, Q16 DATA SYNC DETECT
TP1
SYNC IN FROM CN106 (MONITOR) 5-A2
IC4 READ CLOCK GEN
C21,R42 DEFFERENTIATOR
Q6
GRN VIDEO IN FROM CN106 (MONITOR) 5-B1
IC1 VIDEO AMP
2-A8 GRN VIDEO OUT TO CN101 (CCU)
BLU VIDEO IN FROM CN106 (MONITOR) 5-A1
IC2 VIDEO AMP
1-B2 BLU VIDEO OUT TO CN101 (CCU)
RED VIDE IN FROM CN106 (MONITOR) 5-B3
IC3 VIDEO AMP
1-A1 RED VIDEO OUT TO CN101 (CCU)

CAMERA CONTROL SYSTEM 2 BLOCK DIAGRAM
IF-29 BOARD

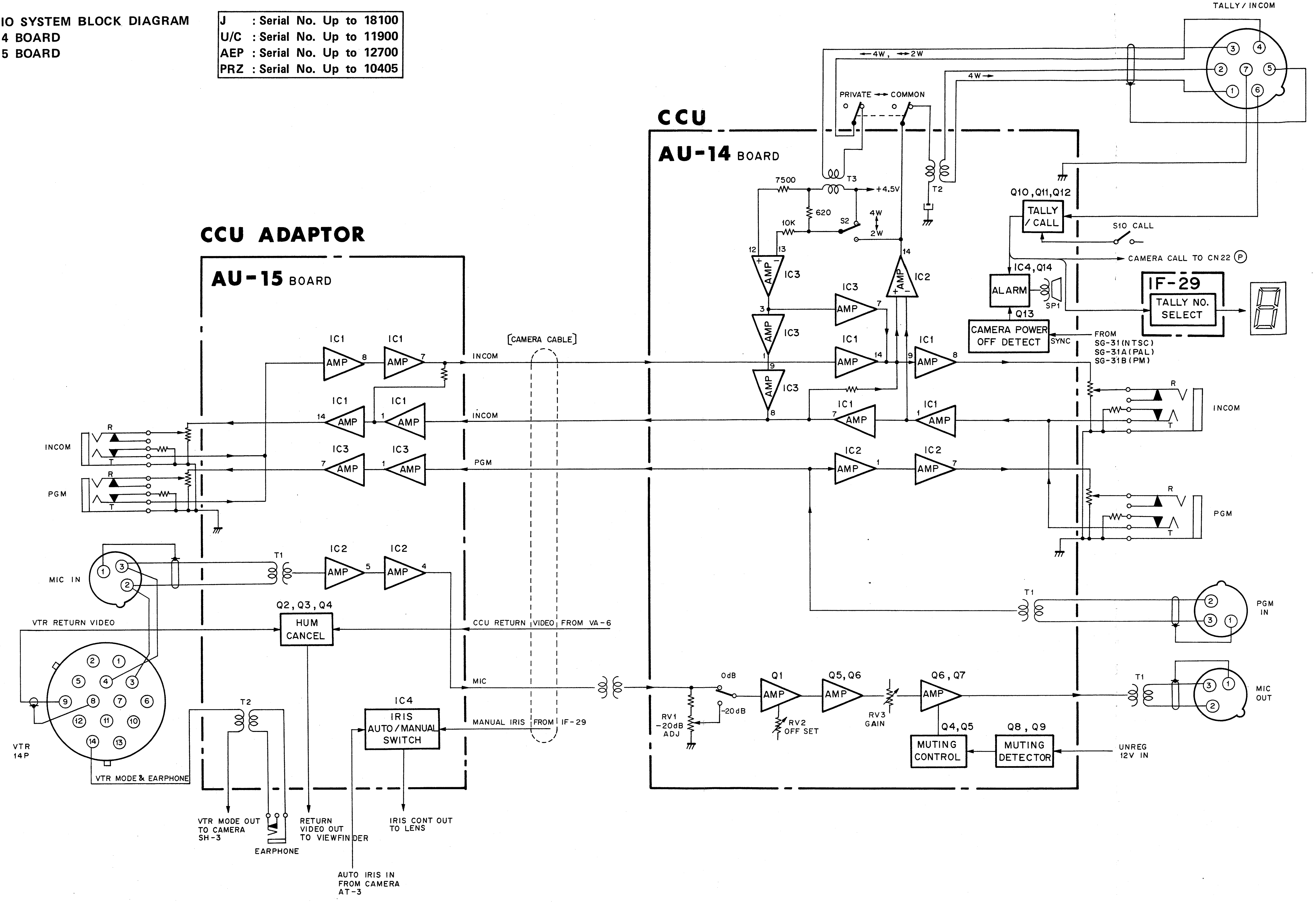

RED H CENT CONT ② FROM RV10 ② 1-A12
RED V CENT CONT ② FROM RV7 ② 1-A11
BLU H CENT CONT ② FROM RV8 ② 1-A10
BLU V CENT CONT ② FROM RV9 ② 1-A9
RED GAIN CONT ② FROM RV5 ② 1-B15
REMOTE RED GAIN IN FROM CN23 (ROMOTE) 2-B5
RED PEDESTAL CONT ② FROM RV3 ② 1-A15
REMOTE RED PEDESTAL IN FROM CN23 (REMOTE) 2-B4
BLU GAIN CONT ② FROM RV6 ② 1-A14
REMOTE BLU GAIN IN FROM CN23 (REMOTE) 2-B1
BLU PEDESTAL CONT ② FROM RV4 ② 1-A13
REMOTE BLU PEDESTAL IN FROM CN23 (REMOTE) 2-A6
MASTER PEDESTAL CONT ② FROM RV12 ② 3-A1
REMOTE MASTER PEDESTAL IN FROM CN23 (REMOTE) 2-A5
IRIS CONT FROM RV11 ② 3-B1
REMOTE IRIS IN FROM CN23 (REMOTE) 2-A4
REMOTE IRIS CONT IN FROM CN23 (REMOTE) 2-A3
+9V
IC1 IC2 IC3 IC8 IC4 BUFFER
IC1 IC2 IC3 IC8 IC4 DRIVER
IC5 IC6 IC7
6-B5 RED H CENT OUT TO CN22 (CAMERA)
6-A5 RED V CENT OUT TO CN22 (CAMERA)
6-A1 BLU H CENT OUT TO CN22 (CAMERA)
6-A4 BLU V CENT OUT TO CN22 (CAMERA)
6-B2 RED GAIN OUT TO CN22 (CAMERA)
6-B3 RED PEDESTAL OUT TO CN22 (CAMERA)
6-A3 BLU GAIN OUT TO CN22 (CAMERA)
6-A2 BLU PEDESTAL OUT TO CN22 (CAMERA)
6-B4 MASTER PEDESTAL OUT TO CN22 (CAMERA)
5-A1 IRIS CONT OUT TO CN22 (CAMERA)
Q4 Q5
REMOTE IN FROM PW-47 2-A7
TEST (IRIS) IN FROM PW-47 2-A1
W/B (IRIS) IN FROM PW-47 2-A2
CALL IN FROM AU-14 5-A3
Q6, Q7 BRIGHT CONTROL (TALLY LED)
S1
IC9 7 SEGMENT DRIVER A B C D a b c d e f g
4-7 TALLY LED "a" OUT
4-1 TALLY LED "b" OUT
4-6 TALLY LED "c" OUT
4-4 TALLY LED "d" OUT
4-2 TALLY LED "e" OUT
4-3 TALLY LED "f" OUT
4-5 TALLY LED "g" OUT
TO LP-10 (TALLY LED)
4-9 CALL OUT TO CN23 (REMOTE)
RED GAIN CONT ① FROM RV5 ① 1-B3
RED PEDESTAL CONT ① FROM RV3 ① 1-B1
BLU GAIN CONT ① FROM RV6 ① 1-B4
BLU PEDESTAL CONT ① FROM RV4 ① 1-B2
RV1 RV2 RV3 RV4
+9V
Q1
PRESET IN FROM S6 (W&B BAL WHITE→BLACK) 2-B6
2-B7 PRESET OUT TO PW-47
Q2
RED GAIN CONT ③ FROM RV5 ③ 1-A5
RED PEDESTAL CONT ③ FROM RV3 ③ 1-A2
BLU GAIN CONT ③ FROM RV6 ③ 1-A4
BLU PEDESTAL CONT ③ FROM RV4 ③ 1-A3
Q3
-9V

GENLOCK CONTROL SYSTEM BLOCK DIAGRAM
SG-31A BOARD


FROM CN11 (GENLOCK)
GEN LOCK VIDEO IN (X) ⑰
GEN LOCK VIDEO IN (G) ㉟
Q2～Q4 FLOATING AMP
0m
300m
S1 CABLE COMP
TP1
Q5, Q6 L4, C12 L9, C30
CHROMA-Y SEP
Y
CHROMA
Q10 BACK PORCH CLAMP
Q7 Q8 CLAMP PULSE GEN
Q9, Q11, IC1 SYNC SEP
RV1 BURST GATE PULSE WIDTH
IC2 BURST GATE PULSE GEN
TP3
Q12 V. SYNC SEP
TP12
IC13 1/2 H KILLER
RV4 H REF
IC3 EVEN (2ND 4TH) FIELD DETECT
1/2fV
IC3
LESS SYNC
IC10 1/2 COUNT DOWN RESET
1/2fH
Q13 IC2 FRAME GATE PULSE GEN (5.5H)
RV2 FRAME GATE PULSE WIDTH
TP4
IC3 FRAME (2ND FIELD) GATE
1/4fV
Q1 V RESET DRIVE
⑯ V RESET OUT (X) TO CN22 (CAMERA)
IC4 ENVELOPE DET
IC3
H H
D6, Q19
Q14～Q16 CHROMA AMP
EXT CHROMA
Q17 IC5 SAMPLING & PHASE DETECT
C40, C41 R56～R58 LPF
TP6
DC
X1 VCXO (17.7MHz)
IC6, IC7 1/4 COUNT DOWN
TP7
fSC
Q20, Q21 SC PHASE SHIFTER
TP8
S2 SC PHASE (90° STEP)
RV6 (SC PHASE FINE)
INT SC
Q18, D5
GATE INHIBIT (NON GENLOCK MODE)
GEN LOCKED INT SC
CHROMA (CAMERA)
Q22～Q24 CHROMA AMP
Q37 BURST GATE
CAMERA OUT BURST
IC8 SC PHASE DETECT
L17 LPF
IC9, Q38 SAMPLING GATE
IC9 SC CONT BUFFER
DC
(0V)
⑩ SC CONT OUT TO CN22 (CAMERA)
IC16 ENVELOPE DET
IC15, Q39
IC15, Q35 GATE PULSE GEN
IC14 BURST GATE PULSE GEN RESET
RV5 BURST GATE PULSE WIDTH
IC13 1/2 H KILLER
RV3 H PHASE
TP11
IC14 1/2 COUNT DOWN RESET
IC10 RESET SET H PHASE DETECTOR (1)
IC11 H PHASE DETECTOR (2)
TP9
Q25, IC11 SAMPLING & HOLD
(2.5V)
⑨ H CONT OUT TO CN22 (CAMERA)
FROM VA-6
COMP VIDEO IN (X) ④ (FROM CAMERA)
COMP VIDEO IN (G) ③ (FROM CAMERA)
Q26 BUFFER
TP10
Q27, Q28 L21, C84 L16, C54
CHROMA-Y SEP
Q31 BACK PORCH CLAMP
Q29 Q30 CLAMP PULSE GEN
Q32, Q33, IC12 SYNC SEP
① HD OUT (X) TO PW-47
⑧ SYNC OUT (X) TO VA-5
㉖ SYNC OUT (X) TO AU-14
㉗ SYNC OUT (X) TO PW-47
⑥ BURST GATE OUT (X) TO VA-6

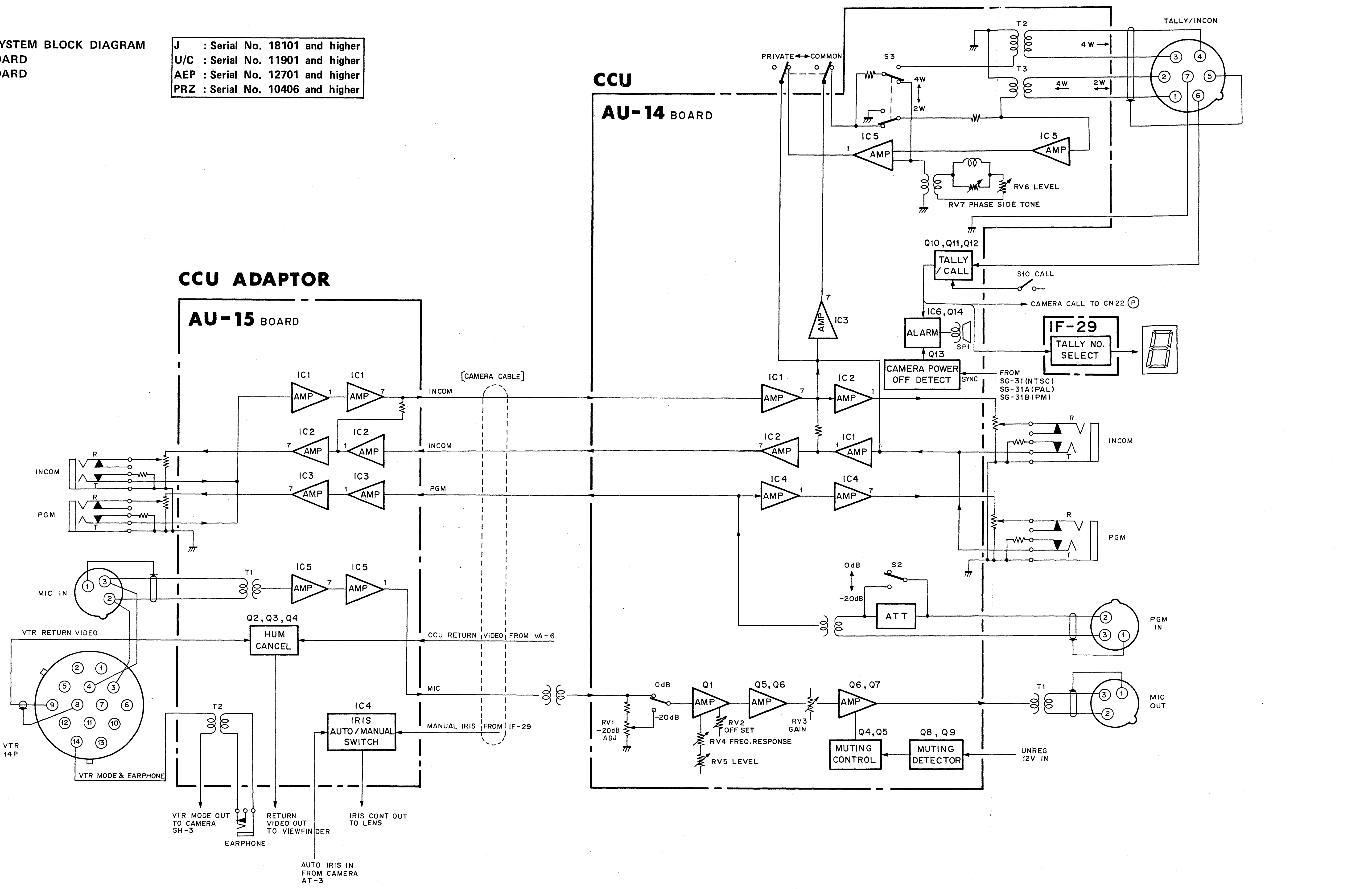
AUDIO SYSTEM BLOCK DIAGRAM
AU-14 BOARD
AU-15 BOARD

J : Serial No. Up to 18100
U/C : Serial No. Up to 11900
AEP : Serial No. Up to 12700
PRZ : Serial No. Up to 10405

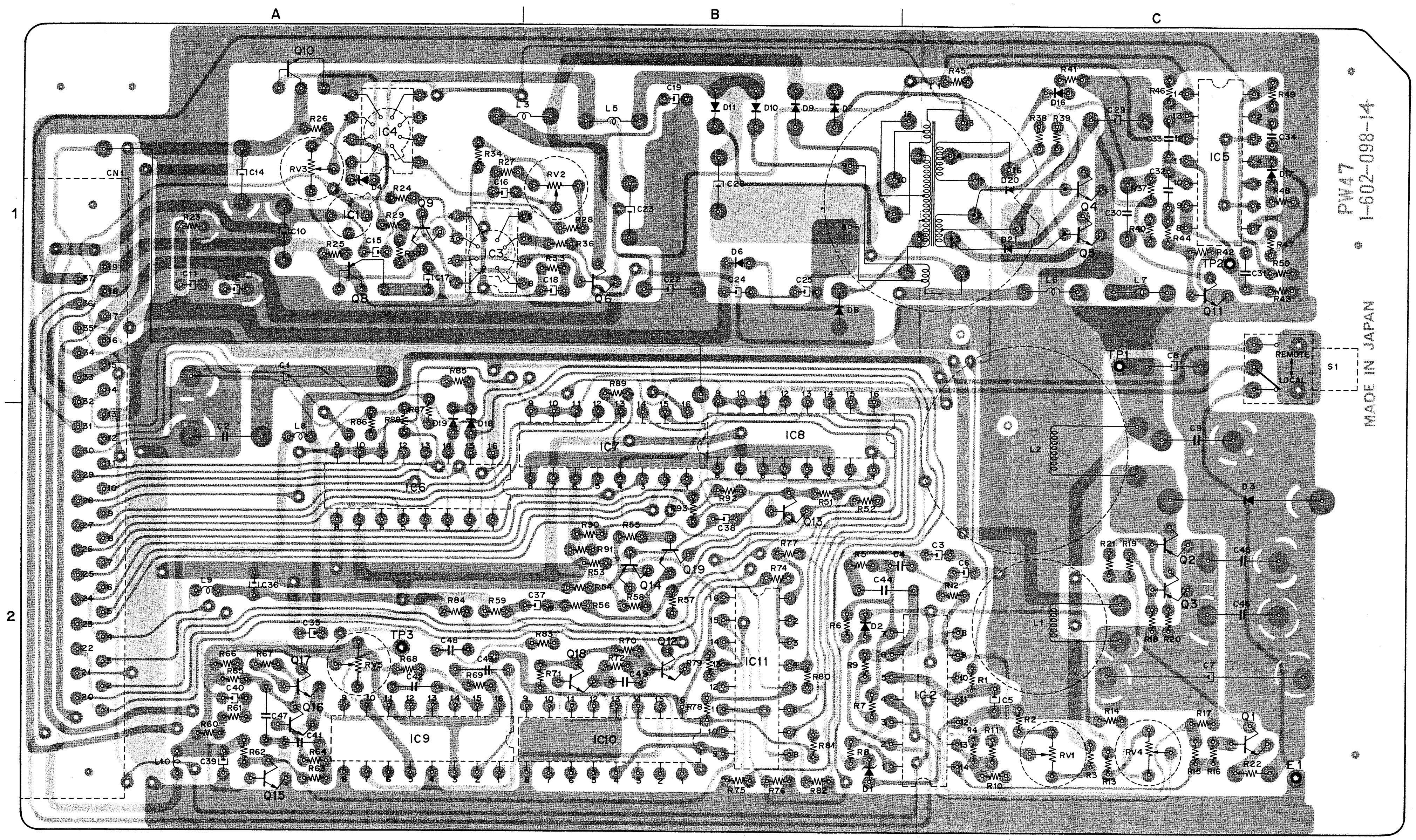

CCU ADAPTOR
AU-15 BOARD
CCU
AU-14 BOARD
TALLY / INCOM
4W, 2W
4W
PRIVATE ↔ COMMON
7500
T3
+4.5V
T2
620
10K
S2
4W
2W
12
13
14
IC3
IC2
IC3
IC1
IC1
AMP
3
7
1
9
8
Q10, Q11, Q12
TALLY / CALL
S10 CALL
CAMERA CALL TO CN22 (P)
IC4, Q14
ALARM
SP1
Q13
CAMERA POWER OFF DETECT
SYNC
FROM SG-31 (NTSC) SG-31A (PAL) SG-31B (PM)
IF-29
TALLY NO. SELECT
[CAMERA CABLE]
INCOM
INCOM
PGM
R
T
IC2
IC1
MIC IN
T1
IC2
5
4
VTR RETURN VIDEO
Q2, Q3, Q4
HUM CANCEL
CCU RETURN VIDEO FROM VA-6
MIC
MANUAL IRIS FROM IF-29
IC4
IRIS AUTO / MANUAL SWITCH
T2
VTR 14P
VTR MODE & EARPHONE
VTR MODE OUT TO CAMERA SH-3
EARPHONE
RETURN VIDEO OUT TO VIEWFINDER
IRIS CONT OUT TO LENS
AUTO IRIS IN FROM CAMERA AT-3
PGM IN
0dB
-20dB
RV1 -20dB ADJ
Q1
RV2 OFF SET
Q5, Q6
RV3 GAIN
Q6, Q7
Q4, Q5
MUTING CONTROL
Q8, Q9
MUTING DETECTOR
UNREG 12V IN
MIC OUT

AUDIO SYSTEM BLOCK DIAGRAM
AU-14 BOARD
AU-15 BOARD

J : Serial No. 18101 and higher
U/C : Serial No. 11901 and higher
AEP : Serial No. 12701 and higher
PRZ : Serial No. 10406 and higher

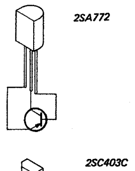

CCU
AU-14 BOARD
CCU ADAPTOR
AU-15 BOARD
PRIVATE COMMON
S3
4W
2W
T2
T3
TALLY/INCON
4W
2W
IC5 AMP
RV6 LEVEL
RV7 PHASE SIDE TONE
Q10, Q11, Q12
TALLY / CALL
S10 CALL
CAMERA CALL TO CN22 Ⓟ
IC3 AMP
IC6, Q14
ALARM
SP1
Q13
CAMERA POWER OFF DETECT
SYNC
FROM SG-31 (NTSC) SG-31A (PAL) SG-31B (PM)
IF-29
TALLY NO. SELECT
[CAMERA CABLE]
IC1 AMP
IC2 AMP
IC3 AMP
IC4 AMP
IC5 AMP
INCOM
PGM
R
T
MIC IN
T1
Q2, Q3, Q4
HUM CANCEL
VTR RETURN VIDEO
CCU RETURN VIDEO FROM VA-6
MIC
IC4
IRIS AUTO/MANUAL SWITCH
MANUAL IRIS FROM IF-29
VTR 14P
VTR MODE & EARPHONE
VTR MODE OUT TO CAMERA SH-3
EARPHONE
RETURN VIDEO OUT TO VIEWFINDER
IRIS CONT OUT TO LENS
AUTO IRIS IN FROM CAMERA AT-3
0dB
S2
-20dB
ATT
PGM IN
RV1 -20dB ADJ
Q1 AMP
RV2 OFF SET
RV4 FREQ. RESPONSE
RV5 LEVEL
Q5, Q6 AMP
RV3 GAIN
Q6, Q7 AMP
Q4, Q5
MUTING CONTROL
Q8, Q9
MUTING DETECTOR
UNREG 12V IN
MIC OUT

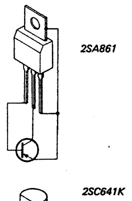
PW-47 BOARD (POWER SUPPLY AND CAMERA CONTROL SYSTEM 1)

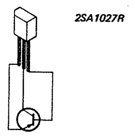

A
B
C
1
2
CN1
Q10
IC4
IC1
IC3
RV3
RV2
Q9
Q8
Q6
L5
D11
D10
D9
C28
D6
D8
T1
D16
D20
D21
Q4
Q5
IC5
TP2
Q11
L6
L7
TP1
REMOTE
LOCAL
S1
C2
C1
L8
IC7
IC8
IC6
D19
D18
L2
D3
Q13
Q14
Q19
Q2
Q3
L9
L1
TP3
RV5
Q17
Q16
Q18
Q12
IC11
IC2
IC9
IC10
Q15
L10
D2
D1
RV1
RV4
Q1
E1
PW47
1-602-098-14
MADE IN JAPAN

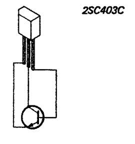
PW-47 -SOLDERING SIDE-

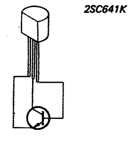
D1	B-2
D2	B-2
D3	C-2
D4	A-1
D6	B-1
D7	B-1
D8	B-1
D9	B-1
D10	B-1
D11	B-1
D16	C-1
D17	C-1
D18	A-2
D19	A-2
D20	C-1
D21	C-1
E1	C-2
IC1	A-1
IC2	C-2
IC3	A-1
IC4	A-1
IC5	C-1
IC6	A-2
IC7	B-2
IC8	B-2
IC9	A-2
IC10	B-2
IC11	B-2
Q1	C-2
Q2	C-2
Q3	C-2
Q4	C-1
Q5	C-1
Q6	B-1
Q8	A-1
Q9	A-1
Q10	A-1
Q11	C-1
Q12	B-2
Q13	B-2
Q14	B-2
Q15	A-2
Q16	A-2
Q17	A-2
Q18	B-2
Q19	B-2
RV1	C-2
RV2	B-1
RV3	A-1
RV4	C-2
RV5	A-2
TP1	C-1
TP2	C-1
TP3	A-2

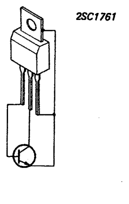


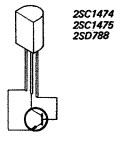


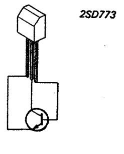




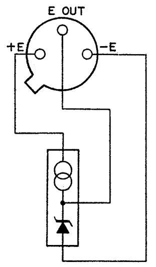




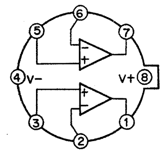

2SC1474
2SC1475
2SD788



AD580M (ANALOG DEVICES)
REFERENCE VOLTAGE GENERATOR (2.5V)
— BOTTOM VIEW—

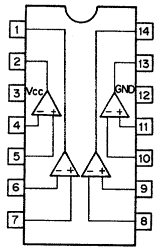


µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
— BOTTOM VIEW—


6
7
5
4 V-
V+ 8
3
2
1

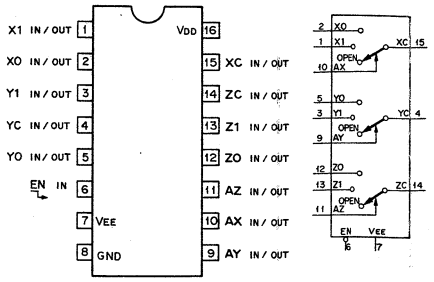
LM339 (NSC)
µPC339C (NEC)
COMPARATOR

—TOP VIEW—


1
2
3 Vcc
4
5
6
7
14
13
GND 12
11
10
9
8

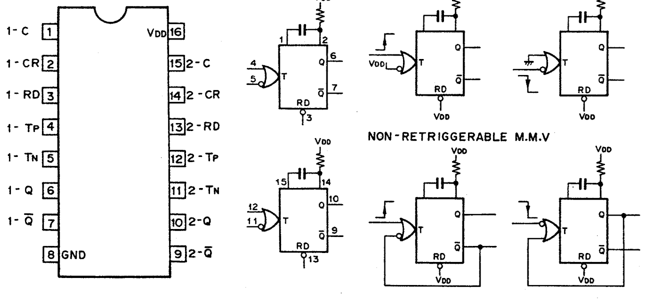
CD4053BE (RCA)
MC14053BCP (MOTOROLA)
TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER

—TOP VIEW—

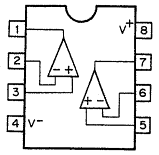

X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE
8 GND
VDD 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
X0
X1
OPEN
AX
XC 15
Y0
Y1
AY
YC 4
Z0
Z1
AZ
ZC 14
EN
VEE
6
7

CONT. INPUTS		ON CHANNEL
EN	A (X, Y, Z,)	
0	0	0
0	1	1
1	X	OPEN

CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-

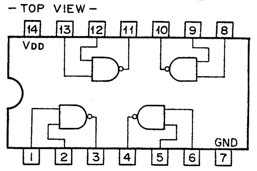

1-C 1
1-CR 2
1-RD 3
1-TP 4
1-TN 5
1-Q 6
1-Q̄ 7
8 GND
VDD 16
15 2-C
14 2-CR
13 2-RD
12 2-TP
11 2-TN
10 2-Q
9 2-Q̄
VDD
RD
T
Q
Q̄
RETRIGGERABLE M.M.V
NON-RETRIGGERABLE M.M.V

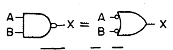
TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -


1
2
3
4 V-
V+ 8
7
6
5

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011BC (NEC)

C-MOS 2-INPUT NAND GATE
- TOP VIEW -

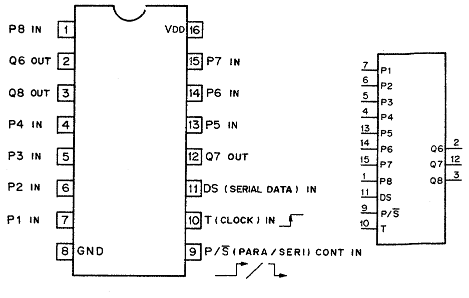

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



X = $\overline{A\cdot B}$ = $\overline{A}+\overline{B}$

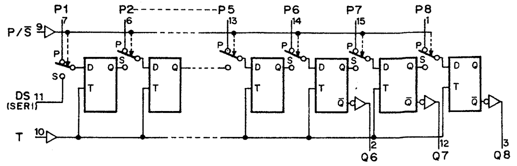
A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4014AE/BE (RCA)
TC4014BP (TOSHIBA)
µPD4014C (NEC)
C-MOS SYNCHRONOUS SERIAL/PARALLEL 8-BIT STATIC SHIFT REGISTER
— TOP VIEW —

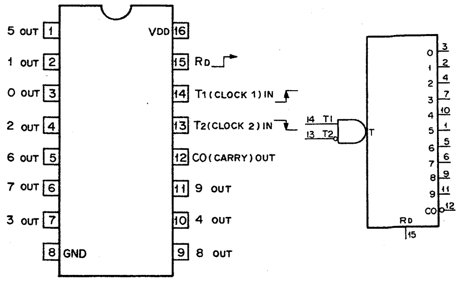

P8 IN 1
Q6 OUT 2
Q8 OUT 3
P4 IN 4
P3 IN 5
P2 IN 6
P1 IN 7
8 GND
VDD 16
15 P7 IN
14 P6 IN
13 P5 IN
12 Q7 OUT
11 DS (SERIAL DATA) IN
10 T (CLOCK) IN
9 P/S̄ (PARA / SERI) CONT IN
P1
P2
P3
P4
P5
P6
P7
P8
DS
P/S̄
T
Q6
Q7
Q8

tn				tn+1							
INPUT				INTERNAL OUTPUTS					OUTPUTS		
P/$\overline{S}$ CONT	T	P	DS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1	↑	P1~P8	X	P1	P2	P3	P4	P5	P6	P7	P8
0	↑	X	1	1	Q1n	Q2n	Q3n	Q4n	Q5n	Q6n	Q7n
0	↑	X	0	0	Q1n	Q2n	Q3n	Q4n	Q5n	Q6n	Q7n
X	0	X	X	Q1n	Q2n	Q3n	Q4n	Q5n	Q6n	Q7n	Q8n

tn; BEFORE CLOCK
tn+1; AFTER CLOCK

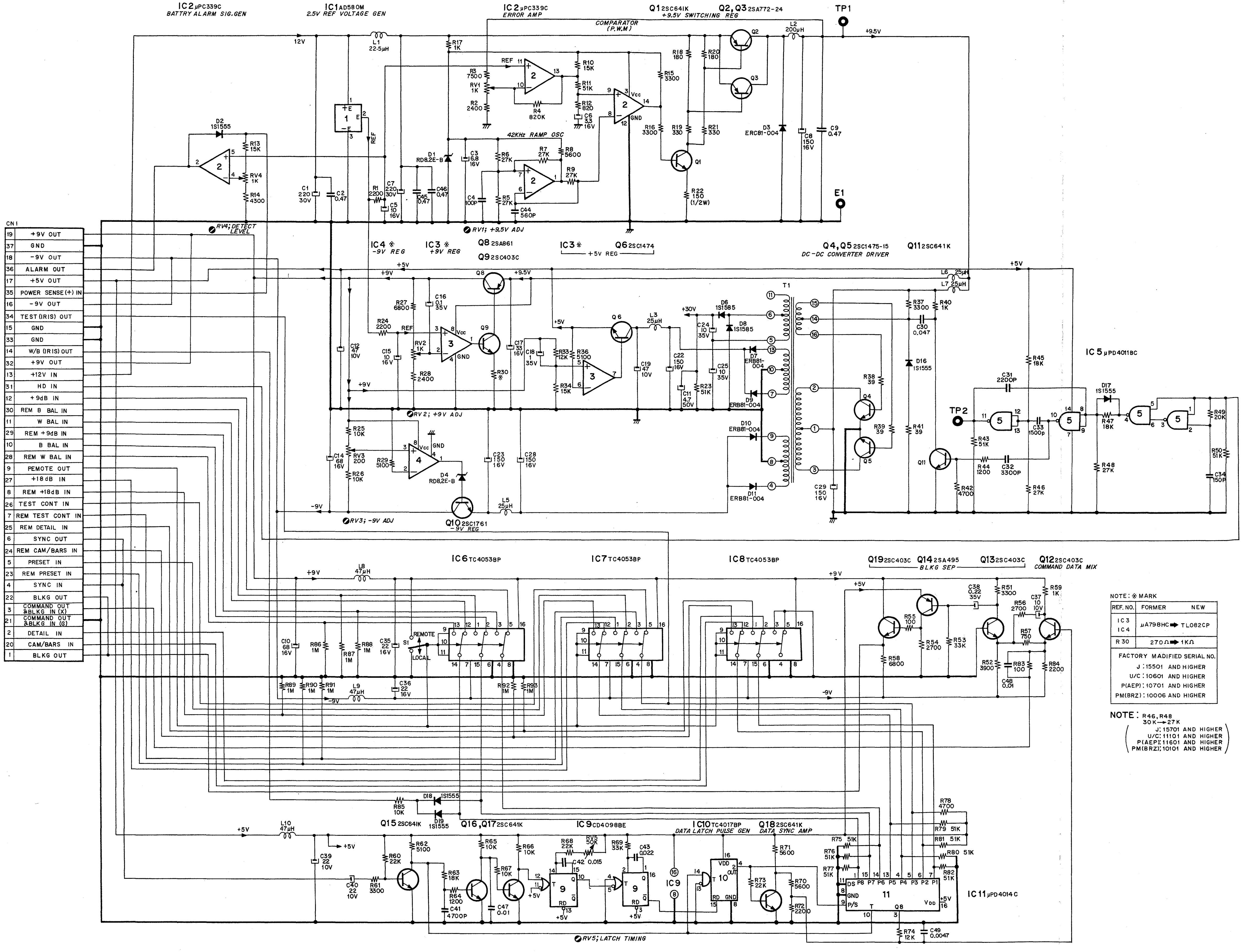

P1
P2
P5
P6
P7
P8
P/S̄ 9
DS 11 (SERI)
T 10
P
S
D
Q
T
Q̄
Q6
Q7
Q8

CD4017AE/BE (RCA)
MC14017BCP (MOTOROLA)
TC4017BP (TOSHIBA)
µPD4017C (NEC)
C-MOS DECADE COUNTER/DIVIDER
— TOP VIEW —


5 OUT 1
1 OUT 2
0 OUT 3
2 OUT 4
6 OUT 5
7 OUT 6
3 OUT 7
8 GND
VDD 16
15 RD
14 T1 (CLOCK 1) IN
13 T2 (CLOCK 2) IN
12 CO (CARRY) OUT
11 9 OUT
10 4 OUT
9 8 OUT
14 T1
13 T2
T
RD
15
CO

COUNT	INPUTS		OUTPUTS										
	RD	T=T1·$\overline{T2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	↑	0	0	0	0	0	0	0	0	0	1	1
1	0	↑	0	0	0	0	0	0	0	0	1	0	1
2	0	↑	0	0	0	0	0	0	0	1	0	0	1
3	0	↑	0	0	0	0	0	0	1	0	0	0	1
4	0	↑	0	0	0	0	0	1	0	0	0	0	1
5	0	↑	0	0	0	0	1	0	0	0	0	0	0
6	0	↑	0	0	0	1	0	0	0	0	0	0	0
7	0	↑	0	0	1	0	0	0	0	0	0	0	0
8	0	↑	0	1	0	0	0	0	0	0	0	0	0
9	0	↑	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

PW-47 BOARD (POWER SUPPLY AND CAMERA CONTROL SYSTEM 1)


IC2 μPC339C BATTRY ALARM SIG.GEN
IC1 AD580M 2.5V REF VOLTAGE GEN
IC2 μPC339C ERROR AMP
COMPARATOR (P.W.M)
Q1 2SC641K +9.5V SWITCHING REG
Q2, Q3 2SA772-24
TP1
+9.5V
12V
L1 22.5μH
L2 200μH
42KHz RAMP OSC
E1
RV1; +9.5V ADJ
RV4; DETECT LEVEL
CN1
19 +9V OUT
37 GND
18 -9V OUT
36 ALARM OUT
17 +5V OUT
35 POWER SENSE(+) IN
16 -9V OUT
34 TEST (IRIS) OUT
15 GND
33 GND
14 W/B (IRIS) OUT
32 +9V OUT
13 +12V IN
31 HD IN
12 +9dB IN
30 REM B BAL IN
11 W BAL IN
29 REM +9dB IN
10 B BAL IN
28 REM W BAL IN
9 PEMOTE OUT
27 +18dB IN
8 REM +18dB IN
26 TEST CONT IN
7 REM TEST CONT IN
25 REM DETAIL IN
6 SYNC OUT
24 REM CAM/BARS IN
5 PRESET IN
23 REM PRESET IN
4 SYNC IN
22 BLKG OUT
3 COMMAND OUT &BLKG IN (X)
21 COMMAND OUT &BLKG IN (G)
2 DETAIL IN
20 CAM/BARS IN
1 BLKG OUT
IC4 ※ -9V REG
IC3 ※ +9V REG
Q8 2SA861
Q9 2SC403C
IC3 ※ +5V REG
Q6 2SC1474
Q4, Q5 2SC1475-15 DC-DC CONVERTER DRIVER
Q11 2SC641K
IC5 μPD4011BC
T1
TP2
RV2; +9V ADJ
RV3; -9V ADJ
Q10 2SC1761 -9V REG
IC6 TC4053BP
IC7 TC4053BP
IC8 TC4053BP
REMOTE
LOCAL
S1
Q19 2SC403C
Q14 2SA495 BLKG SEP
Q13 2SC403C
Q12 2SC403C COMMAND DATA MIX
Q15 2SC641K
Q16, Q17 2SC641K
IC9 CD4098BE
IC10 TC4017BP DATA LATCH PULSE GEN
Q18 2SC641K DATA SYNC AMP
IC11 μPD4014C
RV5; LATCH TIMING

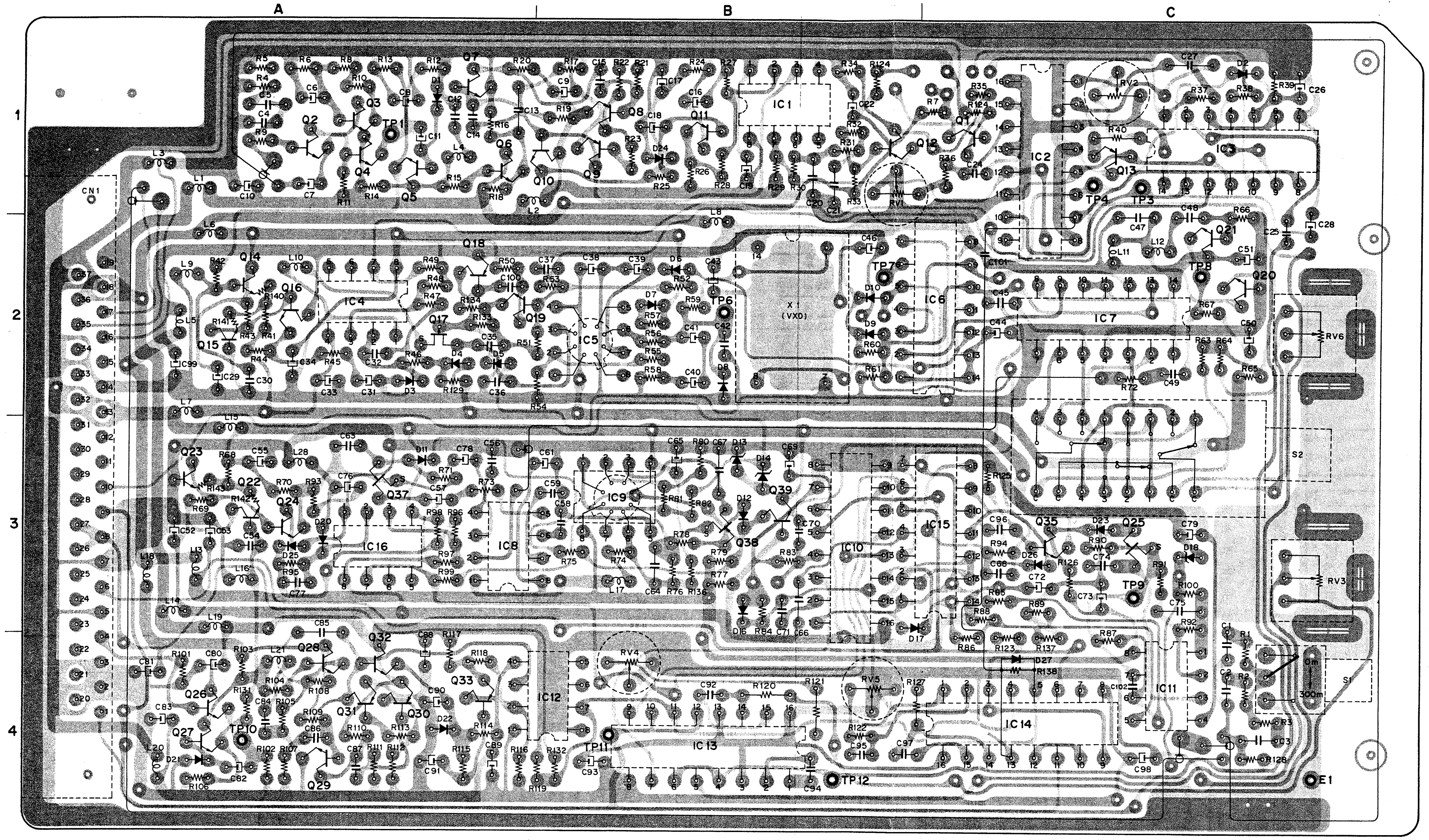
NOTE: ※ MARK

REF. NO.	FORMER NEW
IC3 IC4	μA798HC ➡ TL082CP
R 30	270Ω ➡ 1KΩ

FACTORY MADIFIED SERIAL NO.
J : 15501 AND HIGHER
U/C : 10601 AND HIGHER
P(AEP) : 10701 AND HIGHER
PM(BRZ) : 10006 AND HIGHER

NOTE: R46, R48
30K → 27K
(J: 15701 AND HIGHER
U/C: 11101 AND HIGHER
P(AEP): 11601 AND HIGHER
PM(BRZ): 10101 AND HIGHER)

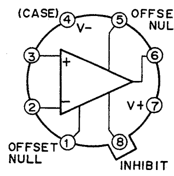
SG-31A BOARD (GENLOCK CONTROL SYSTEM) Serial No. Up to 11500


A
B
C
1
2
3
4
CN1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
X1 (VXO)
S1
S2
RV1
RV2
RV3
RV4
RV5
RV6
TP1
TP3
TP4
TP6
TP7
TP8
TP9
TP10
TP11
TP12
E1

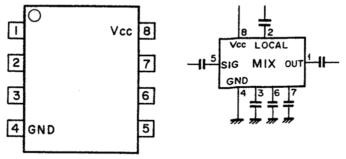
SG-31A—SOLDERING SIDE—

D1	A - 1
D2	C - 1
D3	A - 2
D4	A - 2
D5	A - 2
D6	B - 2
D7	B - 2
D8	B - 2
D9	B - 2
D10	B - 2
D11	A - 3
D12	B - 3
D13	B - 3
D14	B - 3
D16	B - 3
D17	C - 3
D18	C - 3
D20	A - 3
D21	A - 4
D22	A - 4
D23	C - 3
D24	B - 1
D25	A - 3
D26	C - 3
D27	C - 4
E1	C - 4
IC1	B - 1
IC2	C - 1
IC3	C - 1
IC4	A - 2
IC5	B - 2
IC6	C - 2
IC7	C - 2
IC8	A - 3
IC9	B - 3
IC10	B - 3
IC11	C - 4
IC12	B - 4
IC13	B - 4
IC14	C - 4
IC15	C - 3
IC16	A - 3
Q1	C - 1
Q2	A - 1
Q3	A - 1
Q4	A - 1
Q5	A - 1
Q6	A - 1
Q7	A - 1
Q8	B - 1
Q9	B - 1
Q10	B - 1
Q11	B - 1
Q12	B - 1
Q13	C - 1
Q14	A - 2
Q15	A - 2
Q16	A - 2
Q17	A - 2
Q18	A - 2
Q19	A - 2
Q20	C - 2
Q21	C - 2
Q22	A - 3
Q23	A - 3
Q24	A - 3
Q25	C - 3
Q26	A - 4
Q27	A - 4
Q28	A - 4
Q29	A - 4
Q30	A - 4
Q31	A - 4
Q32	A - 4
Q33	A - 4
Q35	C - 3
Q37	A - 3
Q38	B - 3
Q39	B - 3
RV1	B - 1
RV2	C - 1
RV3	C - 3
RV4	B - 4
RV5	B - 4
RV6	C - 2
TP1	A - 1
TP3	C - 1
TP4	C - 1
TP6	B - 2
TP7	B - 2
TP8	C - 2
TP9	C - 3
TP10	A - 4
TP11	B - 4
TP12	B - 4

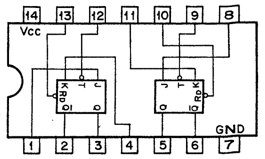
CA3140AT (RCA)
BI-MOS OPERATIONAL AMPLIFIER
—BOTTOM VIEW—


(CASE)
4
V−
5
OFFSET NULL
6
3
+
2
−
V+
7
OFFSET NULL
1
8
INHIBIT

SN16913P (TI)
BALANCED MIXER
— TOP VIEW —

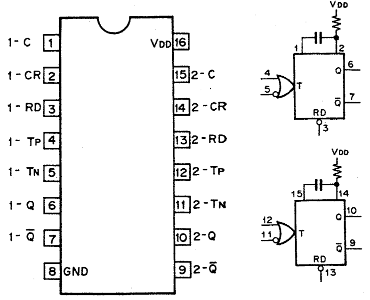

1
2
3
4
GND
Vcc
8
7
6
5
8
2
Vcc
LOCAL
5
SIG
MIX
OUT
1
GND
4
3
6
7

SN74107N (TI)
M53307P (MITSUBISHI)
TTL J-K FLIP FLOP WITH DIRECT RESET
—TOP VIEW—

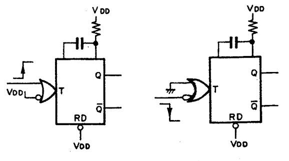

14
13
12
11
10
9
8
Vcc
K
RD
T
J
Q
J
T
K
RD
Q
GND
1
2
3
4
5
6
7

INPUTS				OUT
RD	T	J	K	Qn+1
L	X	X	X	L
H	⎍	L	L	Qn
H	⎍	L	H	L
H	⎍	H	L	H
H	⎍	H	H	$\overline{Qn}$

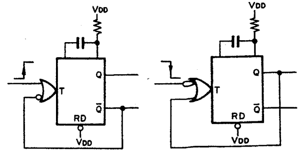
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-

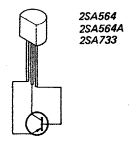

1- C
1- CR
1- RD
1- TP
1- TN
1- Q
1- $\overline{Q}$
1
2
3
4
5
6
7
8
GND
VDD
16
15
14
13
12
11
10
9
2- C
2- CR
2- RD
2- TP
2- TN
2- Q
2- $\overline{Q}$
VDD
T
Q
$\overline{Q}$
RD
VDD
T
Q
$\overline{Q}$
RD

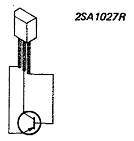
RETRIGGERABLE M.M.V

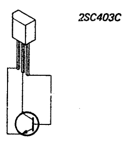

VDD
T
Q
$\overline{Q}$
RD
VDD

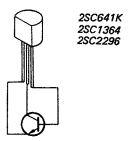
NON-RETRIGGERABLE M.M.V

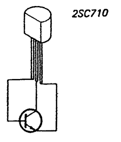

VDD
T
Q
$\overline{Q}$
RD
VDD

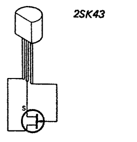

2SA564
2SA564A
2SA733

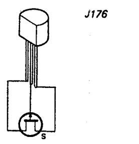

2SA1027R

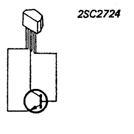

2SC403C


2SC641K
2SC1364
2SC2296

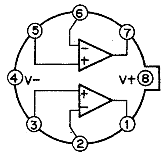

2SC710


2SK43

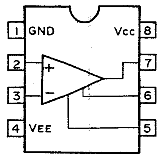

J176


2SC2724

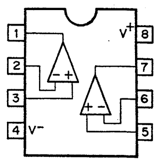
µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
— BOTTOM VIEW —


6
5
7
4
V−
V+
8
3
2
1

µPC311C (NEC)
VOLTAGE COMPARATOR
-TOP VIEW-

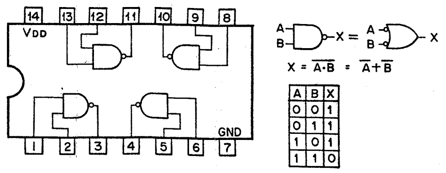

1
GND
2
3
4
VEE
Vcc
8
7
6
5

TL082CP (TI)
TL082ACP (TI)
TL082BCP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -


1
2
3
4
V−
V+
8
7
6
5

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011C (NEC)

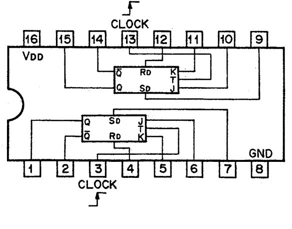
C-MOS 2-INPUT NAND GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7
A
B
X
A
B
X

$X = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4027AE/BE (RCA)
MC14027BPC (MOTOROLA)
F4027BPC (FSC)
TC4027BP (TOSHIBA)
µPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
-TOP VIEW-


CLOCK
16
15
14
13
12
11
10
9
VDD
$\overline{Q}$
RD
K
T
J
Q
SD
Q
SD
J
T
K
$\overline{Q}$
RD
GND
1
2
3
4
5
6
7
8
CLOCK

DIRECT R-S FLIP FLOP

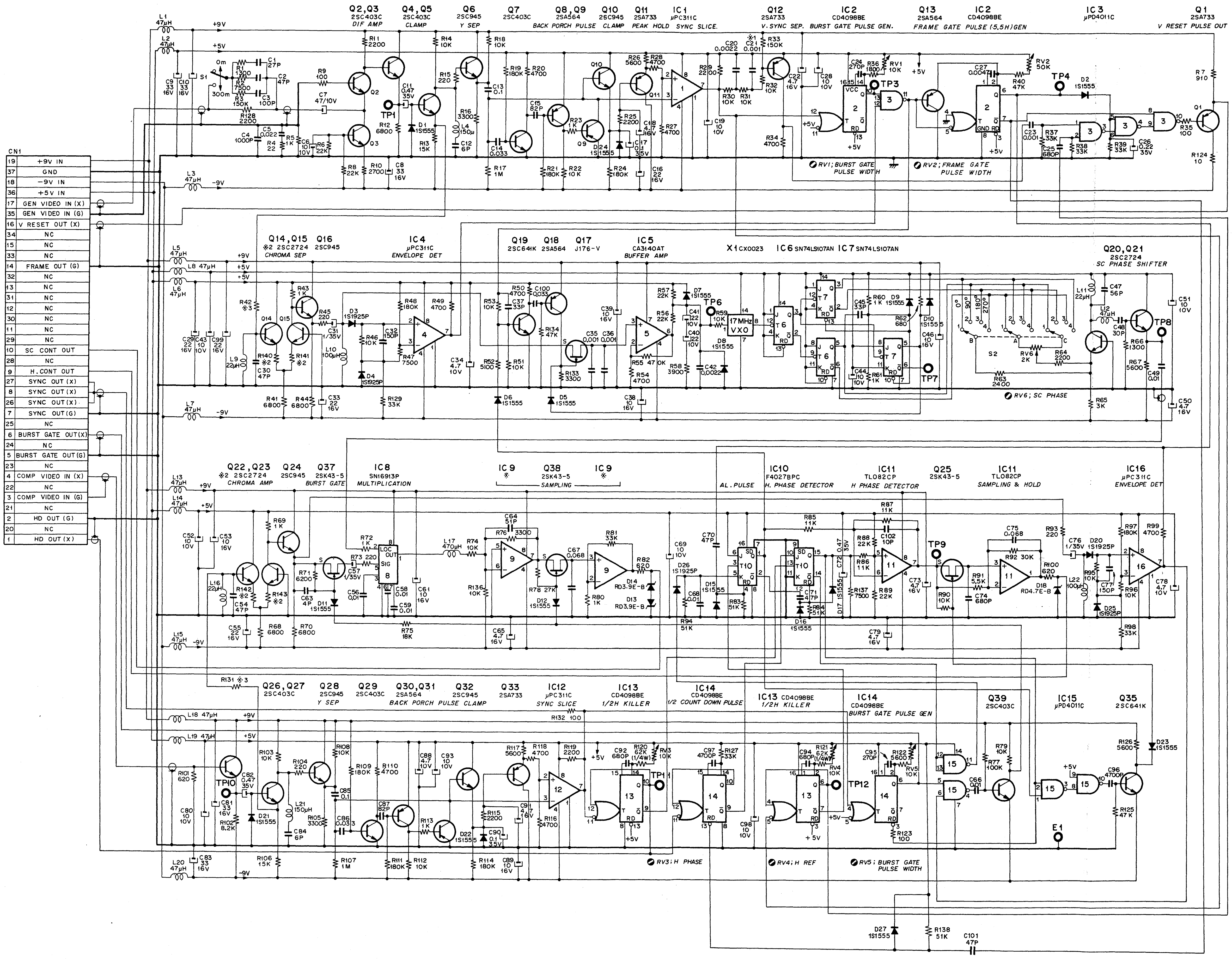
SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

J-K FLIP FLOP

tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

CLOCK T; ⎍
tn; BEFORE CLOCK
tn+1; AFTER CLOCK

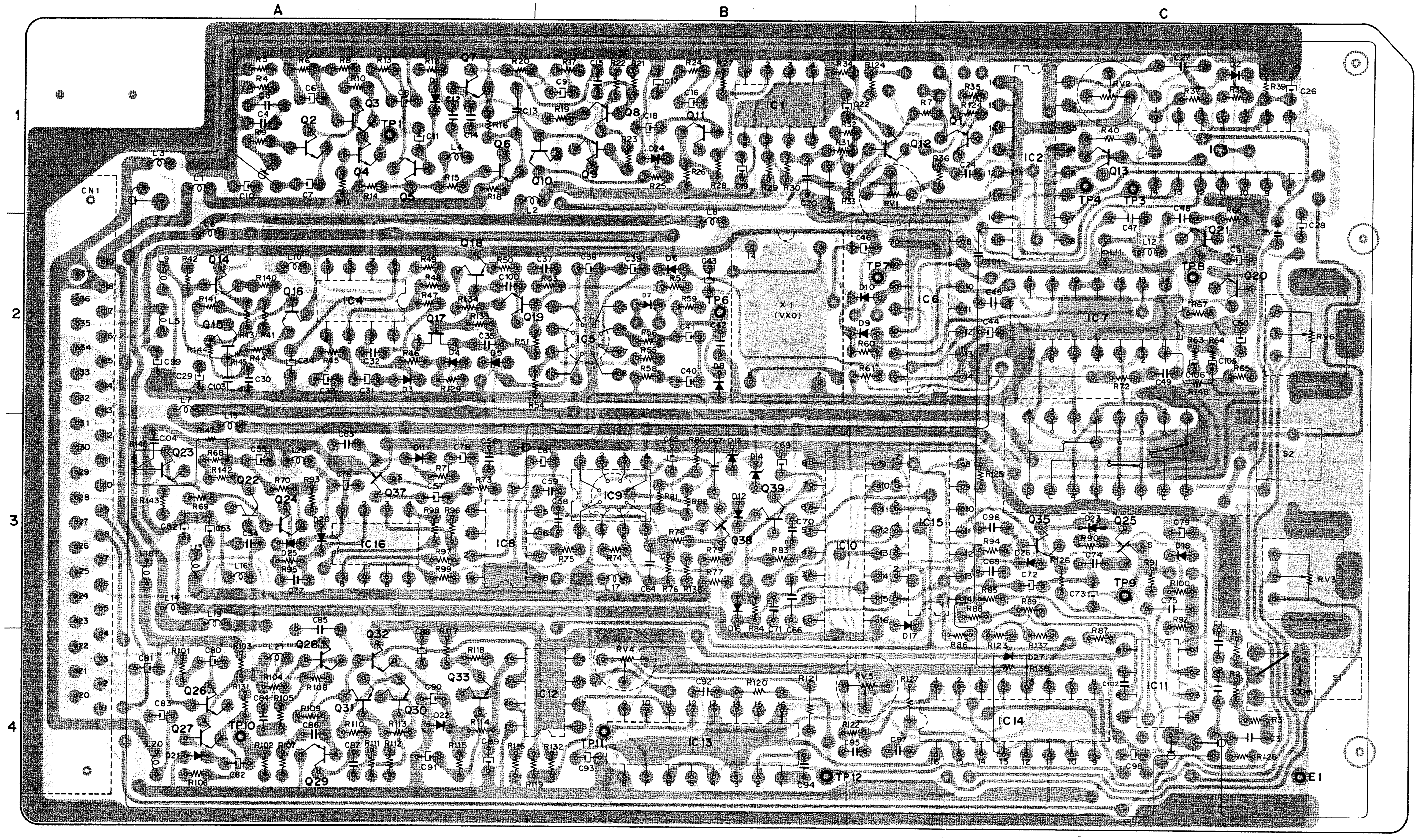
SG-31A BOARD (GENLOCK CONTROL SYSTEM) Serial No. Up to 11500


CN1
19 +9V IN
37 GND
18 -9V IN
36 +5V IN
17 GEN VIDEO IN (X)
35 GEN VIDEO IN (G)
16 V RESET OUT (X)
34 NC
15 NC
33 NC
14 FRAME OUT (G)
32 NC
13 NC
31 NC
12 NC
30 NC
11 NC
29 NC
10 SC CONT OUT
28 NC
9 H. CONT OUT
27 SYNC OUT (X)
8 SYNC OUT (X)
26 SYNC OUT (X)
7 SYNC OUT (G)
25 NC
6 BURST GATE OUT (X)
24 NC
5 BURST GATE OUT (G)
23 NC
4 COMP VIDEO IN (X)
22 NC
3 COMP VIDEO IN (G)
21 NC
2 HD OUT (G)
20 NC
1 HD OUT (X)
Q2, Q3 2SC403C DIF AMP
Q4, Q5 2SC403C CLAMP
Q6 2SC945 Y SEP
Q7 2SC403C
Q8, Q9 2SA564 BACK PORCH PULSE CLAMP
Q10 2SC945
Q11 2SA733 PEAK HOLD
IC1 μPC311C SYNC SLICE.
Q12 2SA733 V. SYNC SEP.
IC2 CD4098BE BURST GATE PULSE GEN.
Q13 2SA564
IC2 CD4098BE FRAME GATE PULSE (5.5H) GEN
IC3 μPD4011C
Q1 2SA733 V RESET PULSE OUT
TP1
TP3
TP4
RV1; BURST GATE PULSE WIDTH
RV2; FRAME GATE PULSE WIDTH
Q14, Q15 ※2 2SC2724 CHROMA SEP
Q16 2SC945
IC4 μPC311C ENVELOPE DET
Q19 2SC641K
Q18 2SA564
Q17 J176-V
IC5 CA3140AT BUFFER AMP
X1 CX0023
IC6 SN74LS107AN
IC7 SN74LS107AN
17MHz VXO
TP6
TP7
Q20, Q21 2SC2724 SC PHASE SHIFTER
TP8
S2
RV6; SC PHASE
Q22, Q23 ※2 2SC2724 CHROMA AMP
Q24 2SC945
Q37 2SK43-5 BURST GATE
IC8 SN16913P MULTIPLICATION
IC9 ※
Q38 2SK43-5 SAMPLING
IC9 ※
AL. PULSE
IC10 F4027BPC H. PHASE DETECTOR
IC11 TL082CP H PHASE DETECTOR
Q25 2SK43-5
IC11 TL082CP SAMPLING & HOLD
IC16 μPC311C ENVELOPE DET
TP9
Q26, Q27 2SC403C
Q28 2SC945 Y SEP
Q29 2SC403C
Q30, Q31 2SA564 BACK PORCH PULSE CLAMP
Q32 2SC945
Q33 2SA733
IC12 μPC311C SYNC SLICE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE 1/2 COUNT DOWN PULSE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE BURST GATE PULSE GEN
Q39 2SC403C
IC15 μPD4011C
Q35 2SC641K
TP10
TP11
TP12
E1
RV3; H PHASE
RV4; H REF
RV5; BURST GATE PULSE WIDTH
+9V
+5V
-9V

NOTE
(1)※; IC9 μA798HC ➡ TL082CP
S/N 10501 ~
(2)※1; C21 0.0022 ➡ 0.001
S/N 10901 ~
(3)※2; Q14, 15, 22, 23
2SC403C ➡ 2SC2724
R140, 141, 142, 143
47Ω ADDED
S/N 11001 ~
(4)※3; R42, R131 3300 ➡ 2400
S/N. 11101 ~

SG-31A BOARD (GENLOCK CONTROL SYSTEM)

Serial No. AEP: 11501 to 12310

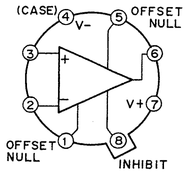

A
B
C
1
2
3
4
CN1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
X1
(VXO)
TP1
TP3
TP4
TP6
TP7
TP8
TP9
TP10
TP11
TP12
RV1
RV2
RV3
RV4
RV5
RV6
S1
S2
E1

SG-31A—SOLDERING SIDE—

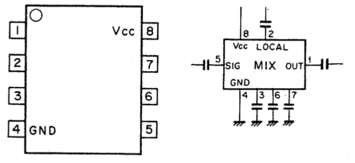
CCU-300P (S/N.11501～)

D1	A-1
D2	C-1
D3	A-2
D4	A-2
D5	A-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	A-3
D12	B-3
D13	B-3
D14	B-3
D16	B-3
D17	C-3
D18	C-3
D20	A-3
D21	A-4
D22	A-4
D23	C-3
D24	B-1
D25	A-3
D26	C-3
D27	C-4
E1	C-4
IC1	B-1
IC2	C-1
IC3	C-1
IC4	A-2
IC5	B-2
IC6	C-2
IC7	C-2
IC8	A-3
IC9	B-3
IC10	B-3
IC11	C-4
IC12	B-4
IC13	B-4
IC14	C-4
IC15	C-3
IC16	A-3
Q1	C-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	A-1
Q8	B-1
Q9	B-1
Q10	B-1
Q11	B-1
Q12	B-1
Q13	C-1
Q14	A-2
Q15	A-2
Q16	A-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	C-2
Q21	C-2
Q22	A-3
Q23	A-3
Q24	A-3
Q25	C-3
Q26	A-4
Q27	A-4
Q28	A-4
Q29	A-4
Q30	A-4
Q31	A-4
Q32	A-4
Q33	A-4
Q35	C-3
Q37	A-3
Q38	B-3
Q39	B-3
RV1	B-1
RV2	C-1
RV3	C-3
RV4	B-4
RV5	B-4
RV6	C-2
TP1	A-1
TP3	C-1
TP4	C-1
TP6	B-2
TP7	B-2
TP8	C-2
TP9	C-3
TP10	A-4
TP11	B-4
TP12	B-4

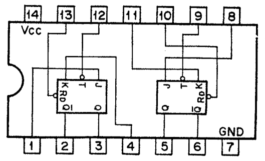
CA3140AT (RCA)
BI-MOS OPERATIONAL AMPLIFIER
—BOTTOM VIEW—


(CASE)
4
V-
5
OFFSET NULL
3
+
2
-
6
V+
7
1
OFFSET NULL
8
INHIBIT

SN16913P (TI)
BALANCED MIXER
—TOP VIEW—

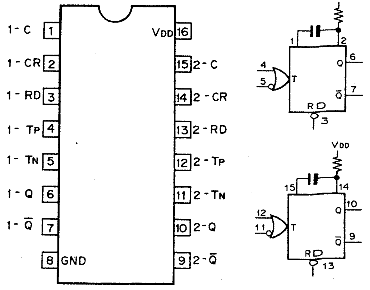

1
2
3
4
GND
Vcc
8
7
6
5
8
2
Vcc
LOCAL
5
SIG
MIX
OUT
1
GND
4
3
6
7

SN74107N (TI)
M53307P (MITSUBISHI)
TTL J-K FLIP FLOP WITH DIRECT RESET
—TOP VIEW—

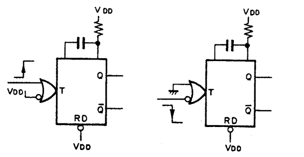

14
13
12
11
10
9
8
Vcc
K
T
J
RD
Q
J
T
K
RD
Q
GND
1
2
3
4
5
6
7

INPUTS				OUT
RD	T	J	K	Qn+1
L	X	X	X	L
H	⎍	L	L	Qn
H	⎍	L	H	L
H	⎍	H	L	H
H	⎍	H	H	$\overline{Qn}$

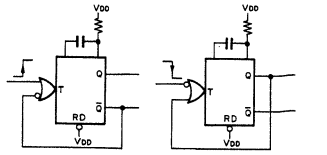
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-

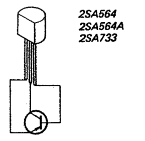

1-C
1-CR
1-RD
1-TP
1-TN
1-Q
1-Q̄
1
2
3
4
5
6
7
8
GND
VDD
16
15
14
13
12
11
10
9
2-C
2-CR
2-RD
2-TP
2-TN
2-Q
2-Q̄
VDD
T
Q
Q̄
RD

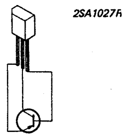
RETRIGGERABLE M.M.V

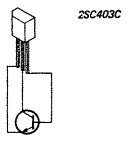


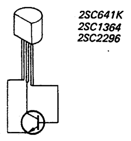
NON-RETRIGGERABLE M.M.V

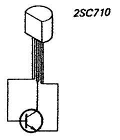


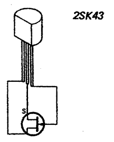

2SA564
2SA564A
2SA733

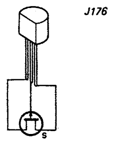


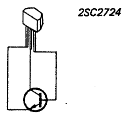



2SC641K
2SC1364
2SC2296

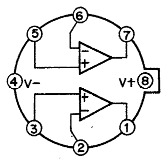




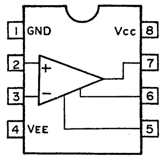




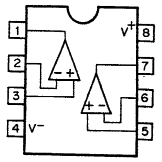
µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
—BOTTOM VIEW—


6
5
7
4
V-
V+
8
3
1
2
-
+

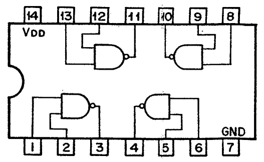
µPC311C (NEC)
VOLTAGE COMPARATOR
-TOP VIEW-

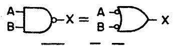

1
GND
Vcc
8
2
7
3
6
4
VEE
5
+
-

TL082CP (TI)
TL082ACP (TI)
TL082BCP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -


1
2
3
4
V-
V+
8
7
6
5

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011C (NEC)
C-MOS 2-INPUT NAND GATE
- TOP VIEW -

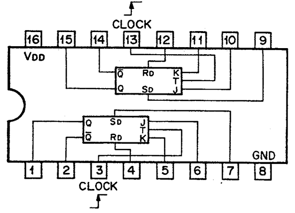

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$X = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4027AE/BE (RCA)
MC14027BPC (MOTOROLA)
F4027BPC (FSC)
TC4027BP (TOSHIBA)
µPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
—TOP VIEW—


CLOCK
16
15
14
13
12
11
10
9
VDD
Q̄
RD
K
T
J
Q
SD
Q
SD
J
T
K
Q̄
RD
GND
1
2
3
4
5
6
7
8
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

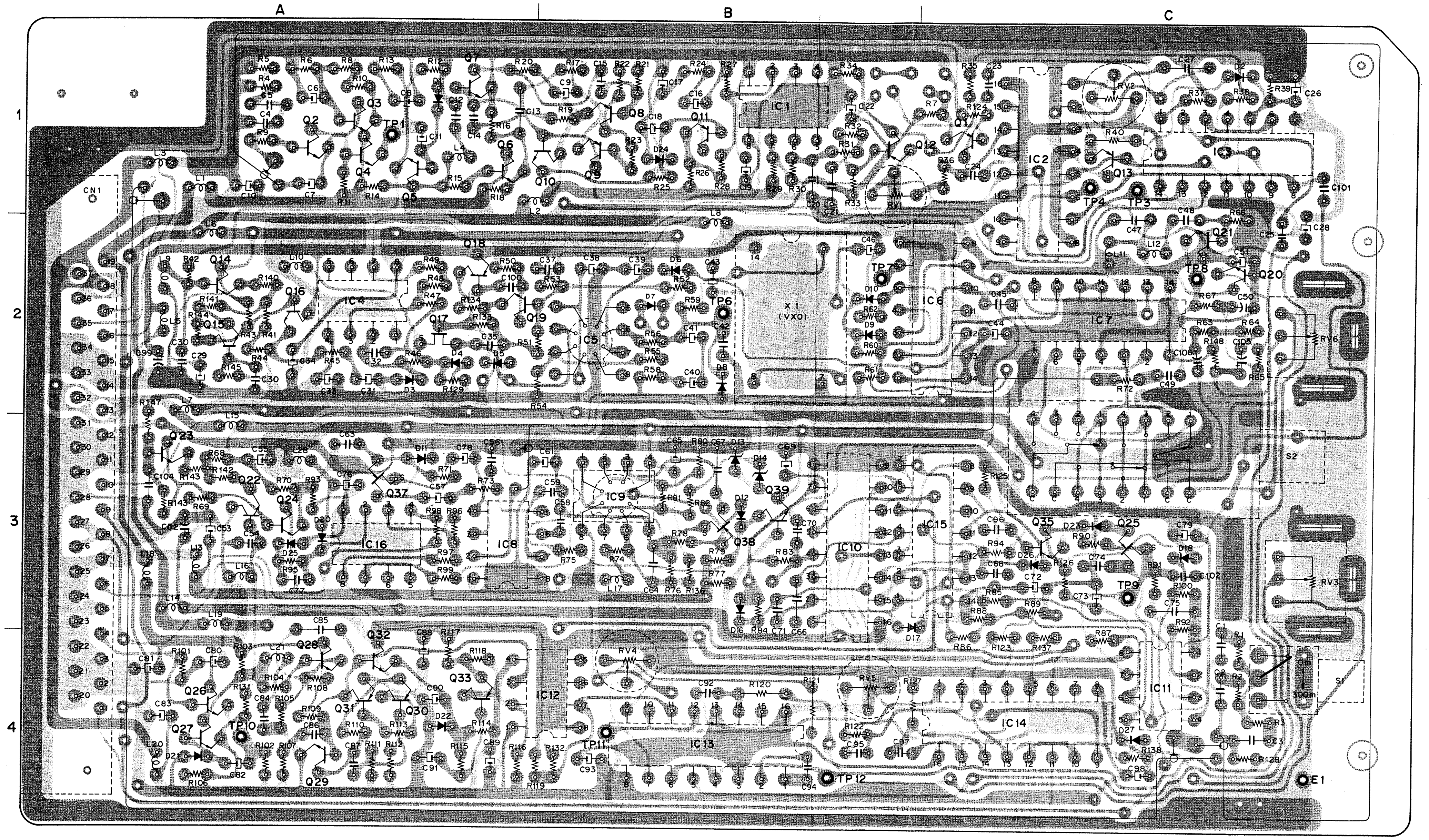
J-K FLIP FLOP

tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

CLOCK T; ⎍
tn; BEFORE CLOCK
tn+1; AFTER CLOCK

SG-31A BOARD (GENLOCK CONTROL SYSTEM)

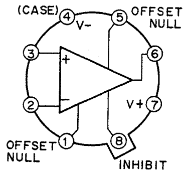
Serial No. AEP: 12401 and higher


A
B
C
1
2
3
4
CN1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
X1 (VXO)
TP1
TP3
TP4
TP6
TP7
TP8
TP9
TP10
TP11
TP12
RV1
RV2
RV3
RV4
RV5
RV6
S1
S2
E1

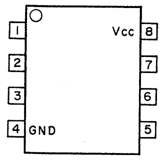
SG-31A—SOLDERING SIDE—
1-602-099-27
CCU-300P

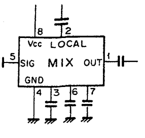
D1	A-1
D2	C-1
D3	A-2
D4	A-2
D5	A-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	A-3
D12	B-3
D13	B-3
D14	B-3
D16	B-3
D17	C-3
D18	C-3
D20	A-3
D21	A-4
D22	A-4
D23	C-3
D24	B-1
D25	A-3
D26	C-3
D27	C-4
E1	C-4
IC1	B-1
IC2	C-1
IC3	C-1
IC4	A-2
IC5	B-2
IC6	C-2
IC7	C-2
IC8	A-3
IC9	B-3
IC10	B-3
IC11	C-4
IC12	B-4
IC13	B-4
IC14	C-4
IC15	C-3
IC16	A-3
Q1	C-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	A-1
Q8	B-1
Q9	B-1
Q10	B-1
Q11	B-1
Q12	B-1
Q13	C-1
Q14	A-2
Q15	A-2
Q16	A-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	C-2
Q21	C-2
Q22	A-2
Q23	A-2
Q24	A-3
Q25	C-3
Q26	A-4
Q27	A-4
Q28	A-4
Q29	A-4
Q30	A-4
Q31	A-4
Q32	A-4
Q33	A-4
Q35	C-3
Q37	A-3
Q38	B-3
Q39	B-3
RV1	B-1
RV2	C-1
RV3	C-3
RV4	B-4
RV5	B-4
RV6	C-2
TP1	A-1
TP3	C-1
TP4	C-1
TP6	B-2
TP7	B-2
TP8	C-2
TP9	C-3
TP10	A-4
TP11	B-4
TP12	B-4

CA3140AT (RCA)
BI-MOS OPERATIONAL AMPLIFIER
—BOTTOM VIEW—

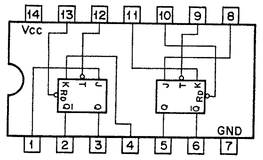

(CASE)
4
V-
5
OFFSET NULL
3
6
2
V+
7
OFFSET NULL
1
8
INHIBIT

SN16913P (TI)
BALANCED MIXER
— TOP VIEW —


1
2
3
4 GND
Vcc 8
7
6
5

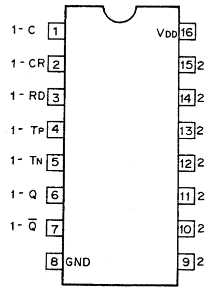

8
2
Vcc LOCAL
5
SIG MIX OUT
1
GND
4
3
6
7

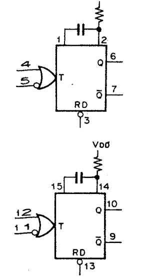
SN74107N (TI)
M53307P (MITSUBISHI)
TTL J-K FLIP FLOP WITH DIRECT RESET
— TOP VIEW —


14
13
12
11
10
9
8
Vcc
K
RD
Q̄
T
J
Q
J
T
K
RD
Q
Q̄
GND
1
2
3
4
5
6
7

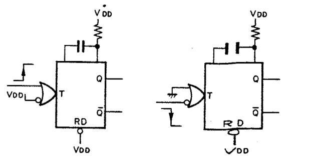
INPUTS				OUT
RD	T	J	K	Qn+1
L	X	X	X	L
H	⎍	L	L	Qn
H	⎍	L	H	L
H	⎍	H	L	H
H	⎍	H	H	$\overline{Qn}$

CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-

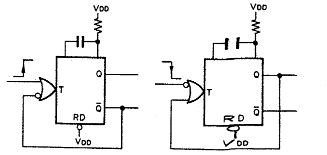

1-C 1
1-CR 2
1-RD 3
1-TP 4
1-TN 5
1-Q 6
1-Q̄ 7
8 GND
VDD 16
15 2-C
14 2-CR
13 2-RD
12 2-TP
11 2-TN
10 2-Q
9 2-Q̄

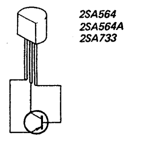

VDD
1
2
4
5
T
Q
6
Q̄
7
RD
3
VDD
15
14
12
11
T
Q
10
Q̄
9
RD
13

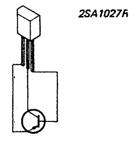
RETRIGGERABLE M.M.V

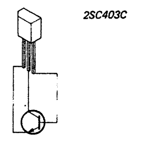

VDD
VDD
T
Q
Q̄
RD
VDD
VDD
T
Q
Q̄
RD
VDD

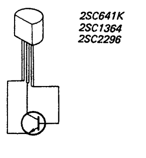
NON-RETRIGGERABLE M.M.V

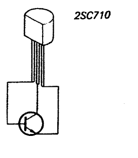

VDD
T
Q
Q̄
RD
VDD
VDD
T
Q
Q̄
RD
VDD

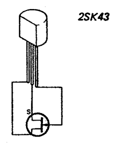

2SA564
2SA564A
2SA733

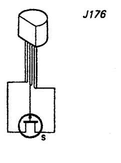


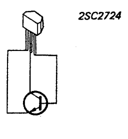



2SC641K
2SC1364
2SC2296

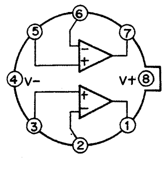




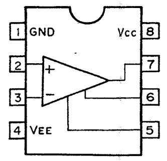




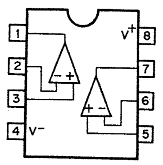
µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
— BOTTOM VIEW —


6
5
7
4 V-
V+ 8
3
1
2

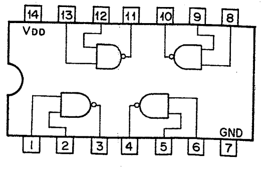
µPC311C (NEC)
VOLTAGE COMPARATOR
-TOP VIEW-

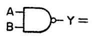

1 GND
2
3
4 VEE
Vcc 8
7
6
5

TL082CP (TI)
TL082ACP (TI)
TL082BCP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -


1
2
3
4 V⁻
V⁺ 8
7
6
5

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011BC (NEC)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

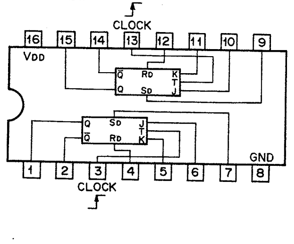


$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0:LOW LEVEL
1:HIGH LEVEL

CD4027AE/BE (RCA)
MC14027BCP (MOTOROLA)
F4027BPC (FSC)
TC4027BP (TOSHIBA)
µPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
-TOP VIEW-


CLOCK
16
15
14
13
12
11
10
9
VDD
Q̄
RD
K
T
Q
SD
J
Q
SD
J
T
Q̄
RD
K
GND
1
2
3
4
5
6
7
8
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

0, LOW LEVEL
1, HIGH LEVEL

J-K FLIP FLOP

tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

CLOCK T; ⎍
tn; BEFORE CLOCK
tn+1; AFTER CLOCK

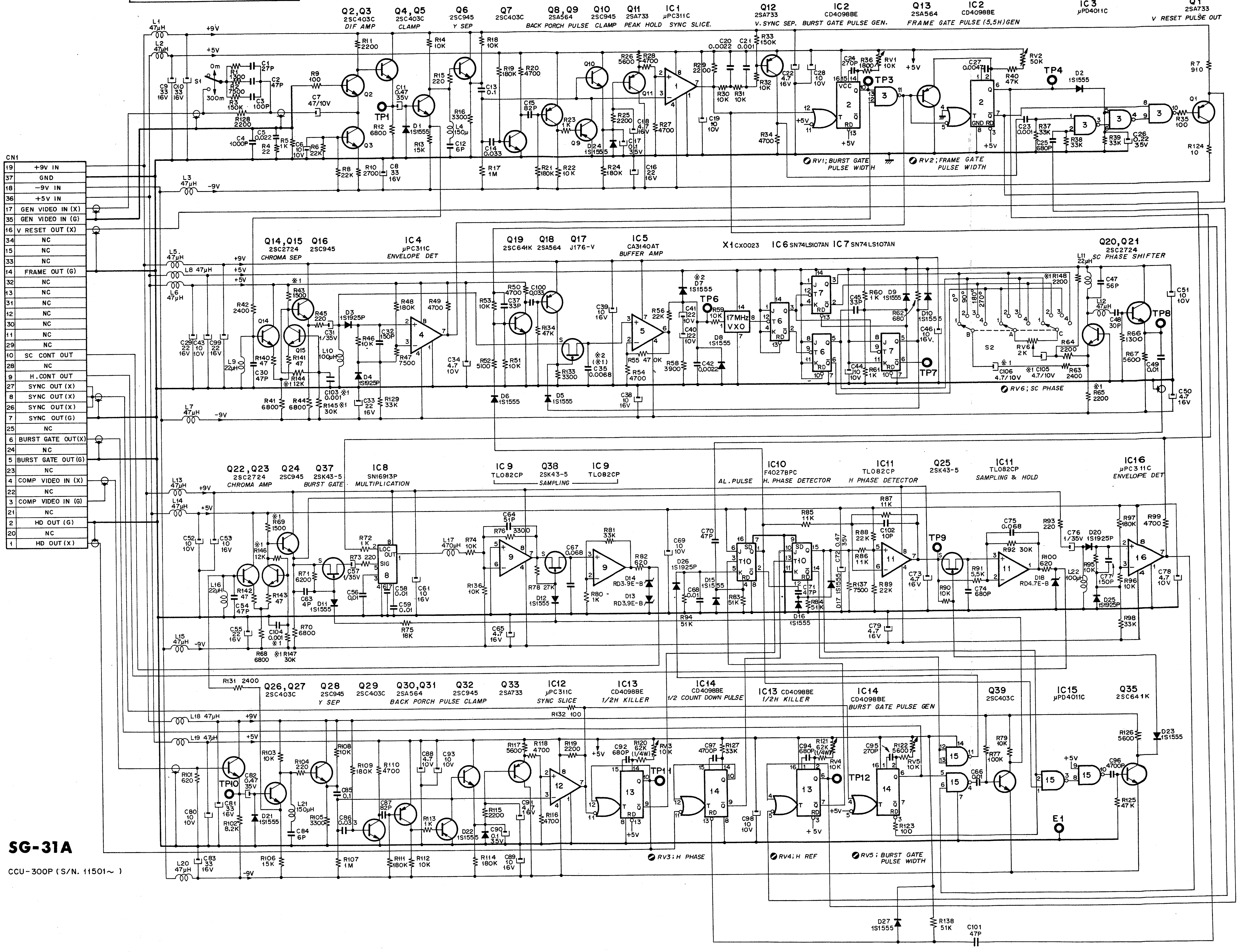
SG-31A BOARD (GENLOCK CONTROL SYSTEM)

Serial No. 11501 and higher

NOTE

※1	R43 R69	1K → 1500
	R144 R146	ADD 12K
	R145 R147	ADD 30K
	C103 C104	ADD 0.001
	C35	0.001 → 0.01
	C36 R57 D7	DELETE
	R65	3K → 2200
	C105 C106	ADD 4.7/10V
	R148	ADD 2200
	S/N	12001 AND HIGHER

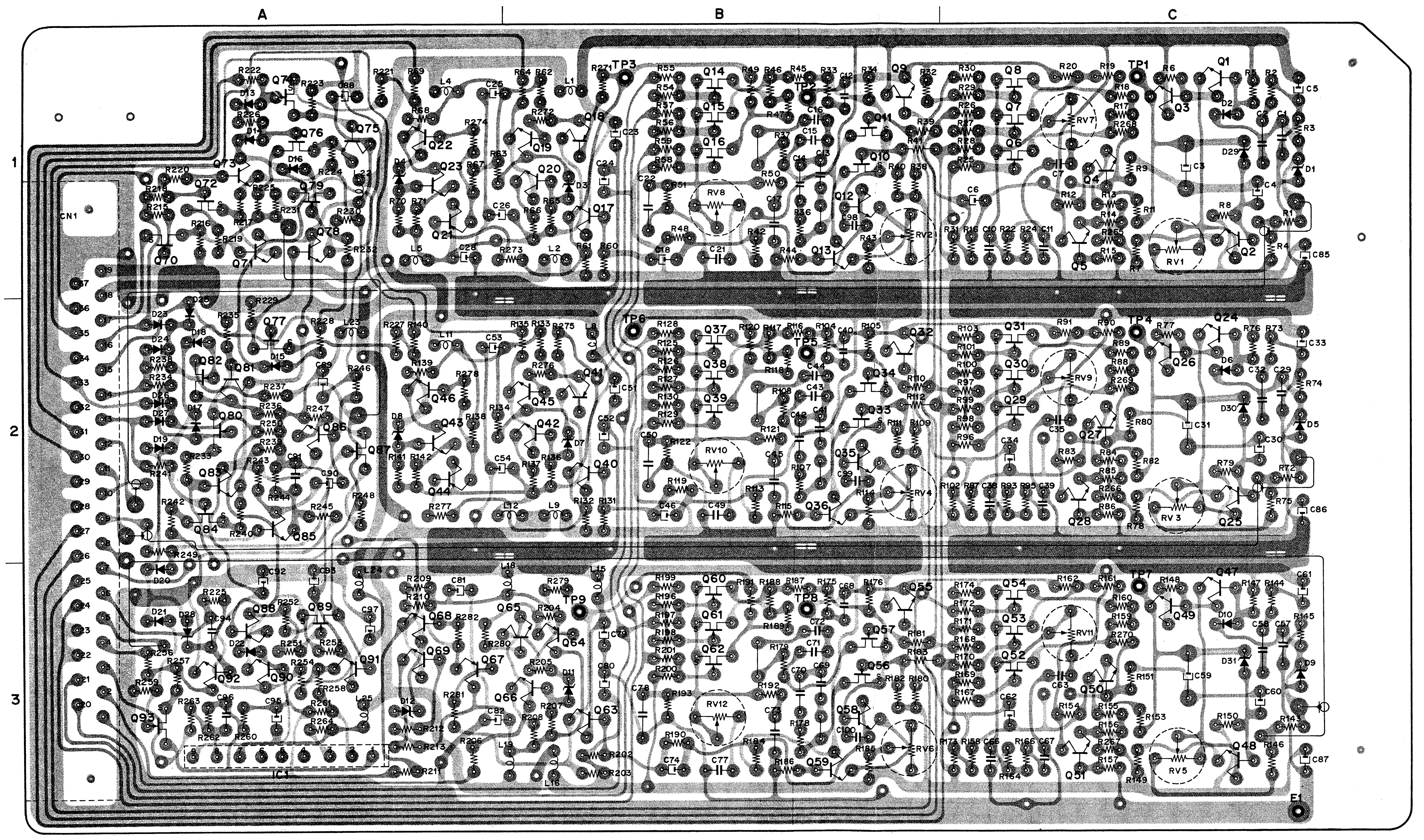
※2	C35	0.01 → 0.0068
	D7	1S1555 ADD
	S/N	12601 AND HIGHER


CN1
19 +9V IN
37 GND
18 −9V IN
36 +5V IN
17 GEN VIDEO IN (X)
35 GEN VIDEO IN (G)
16 V RESET OUT (X)
34 NC
15 NC
33 NC
14 FRAME OUT (G)
32 NC
13 NC
31 NC
12 NC
30 NC
11 NC
29 NC
10 SC CONT OUT
28 NC
9 H.CONT OUT
27 SYNC OUT (X)
8 SYNC OUT (X)
26 SYNC OUT (X)
7 SYNC OUT (G)
25 NC
6 BURST GATE OUT (X)
24 NC
5 BURST GATE OUT (G)
23 NC
4 COMP VIDEO IN (X)
22 NC
3 COMP VIDEO IN (G)
21 NC
2 HD OUT (G)
20 NC
1 HD OUT (X)
Q2,Q3 2SC403C DIF AMP
Q4,Q5 2SC403C CLAMP
Q6 2SC945 Y SEP
Q7 2SC403C
Q8,Q9 2SA564
Q10 2SC945
Q11 2SA733
BACK PORCH PULSE CLAMP
PEAK HOLD
IC1 μPC311C SYNC SLICE.
Q12 2SA733 V. SYNC SEP.
IC2 CD4098BE BURST GATE PULSE GEN.
Q13 2SA564
IC2 CD4098BE
FRAME GATE PULSE (5.5H) GEN
IC3 μPD4011C
Q1 2SA733 V RESET PULSE OUT
RV1; BURST GATE PULSE WIDTH
RV2; FRAME GATE PULSE WIDTH
TP1
TP3
TP4
Q14,Q15 2SC2724 CHROMA SEP
Q16 2SC945
IC4 μPC311C ENVELOPE DET
Q19 2SC641K
Q18 2SA564
Q17 J176-V
IC5 CA3140AT BUFFER AMP
X1 CX0023
IC6 SN74LS107AN
IC7 SN74LS107AN
17MHz VXO
Q20,Q21 2SC2724 SC PHASE SHIFTER
RV6; SC PHASE
S2
TP6
TP7
TP8
Q22,Q23 2SC2724 CHROMA AMP
Q24 2SC945
Q37 2SK43-5 BURST GATE
IC8 SN16913P MULTIPLICATION
IC9 TL082CP
Q38 2SK43-5
IC9 TL082CP
SAMPLING
AL. PULSE
IC10 F4027BPC H. PHASE DETECTOR
IC11 TL082CP H PHASE DETECTOR
Q25 2SK43-5
IC11 TL082CP SAMPLING & HOLD
IC16 μPC311C ENVELOPE DET
TP9
Q26,Q27 2SC403C
Q28 2SC945 Y SEP
Q29 2SC403C
Q30,Q31 2SA564 BACK PORCH PULSE CLAMP
Q32 2SC945
Q33 2SA733
IC12 μPC311C SYNC SLICE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE 1/2 COUNT DOWN PULSE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE BURST GATE PULSE GEN
Q39 2SC403C
IC15 μPD4011C
Q35 2SC641K
RV3; H PHASE
RV4; H REF
RV5; BURST GATE PULSE WIDTH
TP10
TP11
TP12
E1

SG-31A

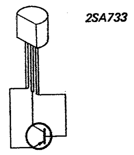
CCU-300P (S/N. 11501～)

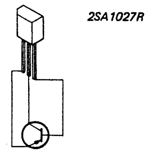
VA-5 BOARD (R, G, B CABLE COMPENSATOR)

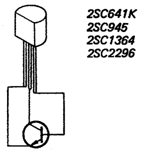


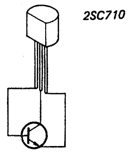
VA-5 —SOLDERING SIDE—

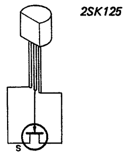
D1	C - 1
D2	C - 1
D3	B - 1
D4	A - 1
D5	C - 2
D6	C - 2
D7	B - 2
D8	A - 2
D9	C - 3
D10	C - 3
D11	B - 3
D12	A - 3
D13	A - 1
D14	A - 1
D15	A - 2
D16	A - 1
D17	A - 2
D18	A - 2
D19	A - 2
D20	A - 3
D21	A - 3
D22	A - 3
D23	A - 2
D24	A - 2
D25	A - 2
D26	A - 2
D27	A - 2
D28	A - 3
D29	C - 1
D30	C - 2
D31	C - 3
E1	C - 3
IC1	A - 3
Q1	C - 1
Q2	C - 1
Q3	C - 1
Q4	C - 1
Q5	C - 1
Q6	C - 1
Q7	C - 1
Q8	C - 1
Q9	B - 1
Q10	B - 1
Q11	B - 1
Q12	B - 1
Q13	B - 1
Q14	B - 1
Q15	B - 1
Q16	B - 1
Q17	B - 1
Q18	B - 1
Q19	B - 1
Q20	B - 1
Q21	A - 1
Q22	A - 1
Q23	A - 1
Q24	C - 2
Q25	C - 2
Q26	C - 2
Q27	C - 2
Q28	C - 2
Q29	C - 2
Q30	C - 2
Q31	C - 2
Q32	B - 2
Q33	B - 2
Q34	B - 2
Q35	B - 2
Q36	B - 2
Q37	B - 2
Q38	B - 2
Q39	B - 2
Q40	B - 2
Q41	B - 2
Q42	B - 2
Q43	A - 2
Q44	A - 2
Q45	B - 2
Q46	A - 2
Q47	C - 3
Q48	C - 3
Q49	C - 3
Q50	C - 3
Q51	C - 3
Q52	C - 3
Q53	C - 3
Q54	C - 3
Q55	B - 3
Q56	B - 3
Q57	B - 3
Q58	B - 3
Q59	B - 3
Q60	B - 3
Q61	B - 3
Q62	B - 3
Q63	B - 3
Q64	B - 3
Q65	B - 3
Q66	B - 3
Q67	A - 3
Q68	A - 3
Q69	A - 3
Q70	A - 1
Q71	A - 1
Q72	A - 1
Q73	A - 1
Q74	A - 1
Q75	A - 1
Q76	A - 1
Q77	A - 2
Q78	A - 1
Q79	A - 1
Q80	A - 2
Q81	A - 2
Q82	A - 2
Q83	A - 2
Q84	A - 2
Q85	A - 2
Q86	A - 2
Q87	A - 2
Q88	A - 3
Q89	A - 3
Q90	A - 3
Q91	A - 3
Q92	A - 3
Q93	A - 3
RV1	C - 1
RV2	B - 1
RV3	C - 2
RV4	B - 2
RV5	C - 3
RV6	B - 3
RV7	C - 1
RV8	B - 1
RV9	C - 2
RV10	B - 2
RV11	C - 3
RV12	B - 3
TP1	C - 1
TP2	B - 1
TP3	B - 1
TP4	C - 2
TP5	B - 2
TP6	B - 2
TP7	C - 3
TP8	B - 3
TP9	B - 3


2SA733

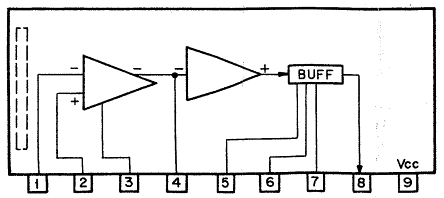

2SA1027R


2SC641K
2SC945
2SC1364
2SC2296

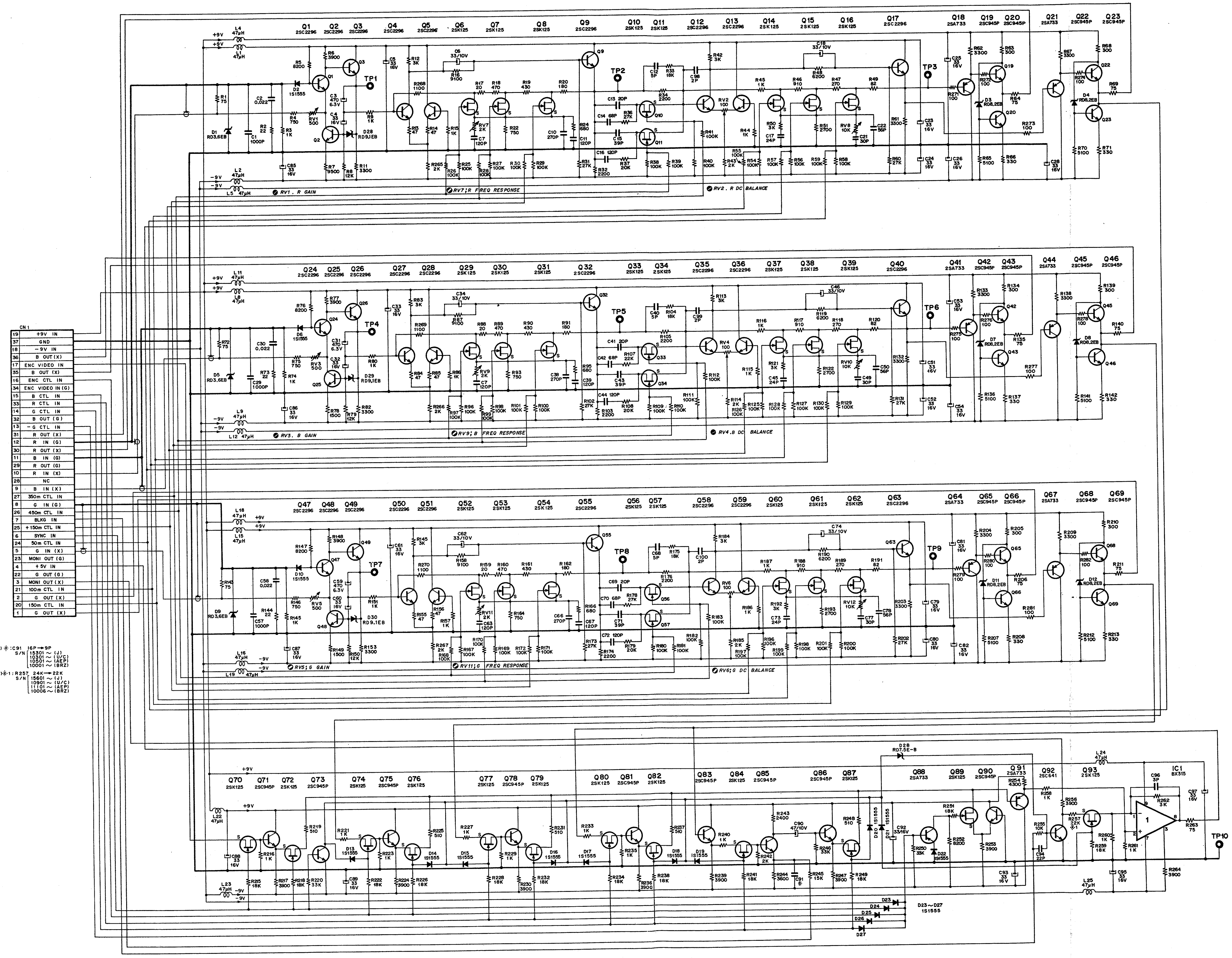

2SC710


2SK125

BX315 (SONY)
BX315 A (SONY)
VIDEO OUTPUT AMPLIFIER (PHASE INVERTED)
— REAR VIEW —



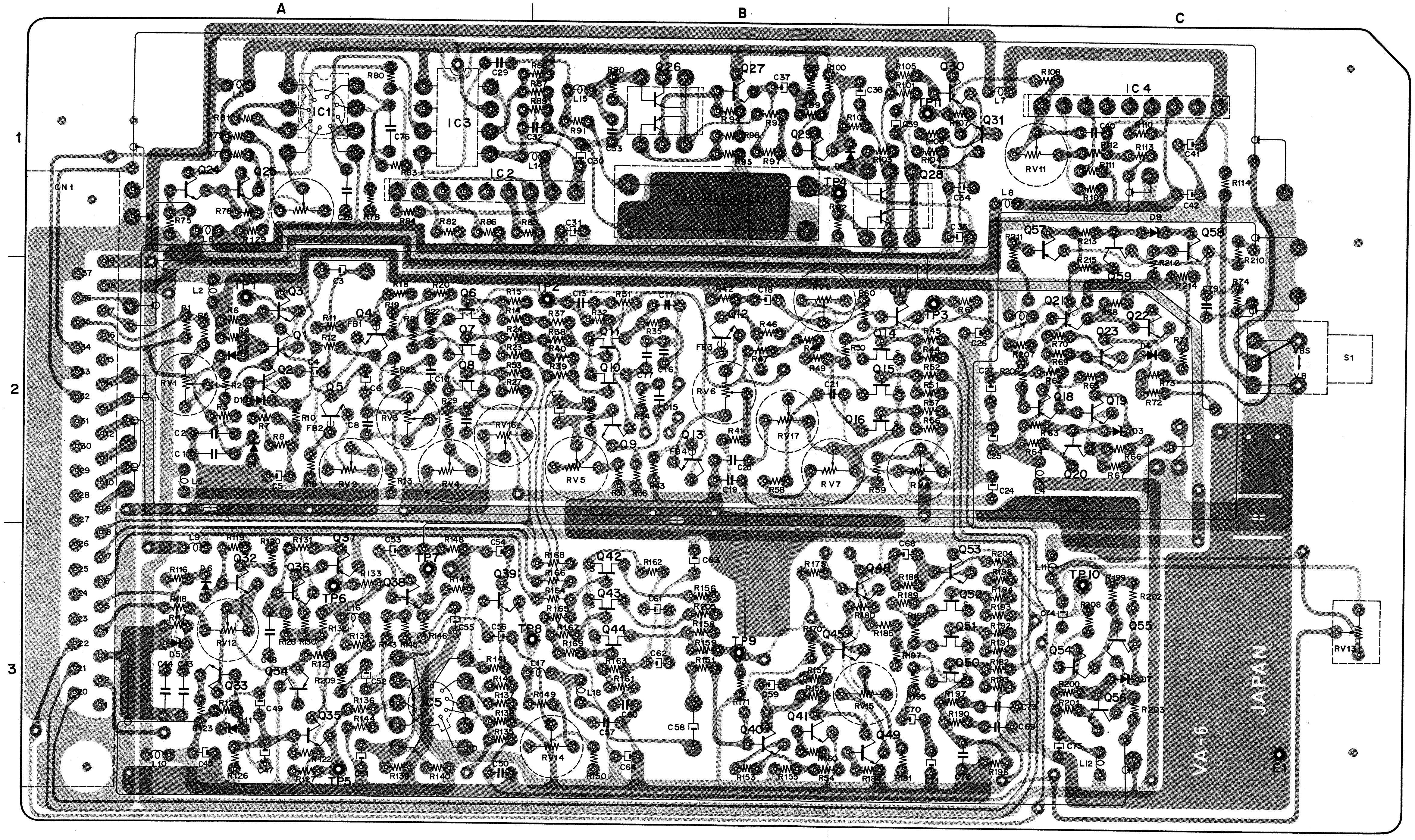
VA-5 BOARD (R, G, B CABLE COMPENSATOR)


CN1
19 +9V IN
37 GND
18 −9V IN
36 B OUT (X)
17 ENC VIDEO IN
35 B OUT (X)
16 ENC CTL IN
34 ENC VIDEO IN (G)
15 B CTL IN
33 R CTL IN
14 G CTL IN
32 B OUT (G)
13 −G CTL IN
31 R OUT (X)
12 R IN (G)
30 R OUT (X)
11 B IN (G)
29 R OUT (G)
10 R IN (X)
28 NC
9 B IN (X)
27 350m CTL IN
8 G IN (G)
26 450m CTL IN
7 BLKG IN
25 +150m CTL IN
6 SYNC IN
24 50m CTL IN
5 G IN (X)
23 MONI OUT (G)
4 +5V IN
22 G OUT (G)
3 MONI OUT (X)
21 100m CTL IN
2 G OUT (X)
20 150m CTL IN
1 G OUT (X)
RV1, R GAIN
RV7; R FREQ RESPONSE
RV2, R DC BALANCE
RV3, B GAIN
RV9; B FREQ RESPONSE
RV4, B DC BALANCE
RV5; G GAIN
RV11; G FREQ RESPONSE
RV6; G DC BALANCE
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
IC1 BX315
D23~D27 1S1555

NOTE(1) ※ : C91 16P → 9P
S/N [15301 ~ (J)
10301 ~ (U/C)
10501 ~ (AEP)
10001 ~ (BRZ)

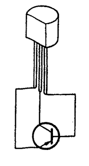
(2) ※1 : R257 24K → 22K
S/N [15601 ~ (J)
10901 ~ (U/C)
11101 ~ (AEP)
10006 ~ (BRZ)

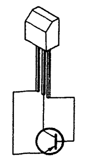
VA-6 BOARD (VIDEO (VBS) CABLE COMPENSATOR)


A
B
C
1
2
3
CN1
IC1
IC2
IC3
IC4
IC5
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
RV1
RV2
RV3
RV4
RV5
RV6
RV7
RV11
RV12
RV13
RV14
RV15
RV16
RV17
S1
VBS
VB
E1
VA-6
JAPAN

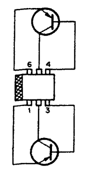
VA- 6 —SOLDERING SIDE—

D1	A - 2
D2	A - 2
D3	C - 2
D4	C - 2
D5	A - 3
D6	A - 3
D7	C - 3
D8	B - 1
D9	C - 1
D10	A - 2
D11	A - 3
DL1	B - 1
E1	C - 3
IC1	A - 1
IC2	A - 1
IC3	A - 1
IC4	C - 1
IC5	A - 3
Q1	A - 2
Q2	A - 2
Q3	A - 2
Q4	A - 2
Q5	A - 2
Q6	A - 2
Q7	A - 2
Q8	A - 2
Q9	B - 2
Q10	B - 2
Q11	B - 2
Q12	B - 2
Q13	B - 2
Q14	B - 2
Q15	B - 2
Q16	B - 2
Q17	B - 2
Q18	C - 2
Q19	C - 2
Q20	C - 2
Q21	C - 2
Q22	C - 2
Q23	C - 2
Q24	A - 1
Q25	A - 1
Q26	B - 1
Q27	B - 1
Q28	B - 1
Q29	B - 1
Q30	C - 1
Q31	C - 1
Q32	A - 3
Q33	A - 3
Q34	A - 3
Q35	A - 3
Q36	A - 3
Q37	A - 3
Q38	A - 3
Q39	A - 3
Q40	B - 3
Q41	B - 3
Q42	B - 3
Q43	B - 3
Q44	B - 3
Q45	B - 3
Q48	B - 3
Q49	B - 3
Q50	C - 3
Q51	C - 3
Q52	C - 3
Q53	C - 3
Q54	C - 3
Q55	C - 3
Q56	C - 3
Q57	C - 1
Q58	C - 1
Q59	C - 1
RV1	A - 2
RV2	A - 2
RV3	A - 2
RV4	A - 2
RV5	B - 2
RV6	B - 2
RV7	B - 2
RV8	B - 2
RV9	B - 2
RV10	A - 1
RV11	C - 1
RV12	A - 3
RV13	C - 3
RV14	B - 3
RV15	B - 3
RV16	A - 2
RV17	B - 2
TP1	A - 2
TP2	B - 2
TP3	B - 2
TP4	B - 1
TP5	A - 3
TP6	A - 3
TP7	A - 3
TP8	B - 3
TP9	B - 3
TP10	C - 3
TP11	B - 1

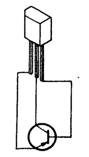

2SA733

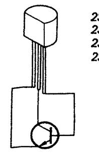

2SA844

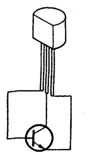
TOP VIEW



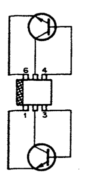
2SA884


2SA1027R

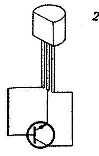

2SC641K
2SC945
2SC1364
2SC2296

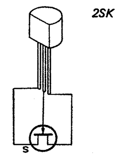

2SC710

TOP VIEW



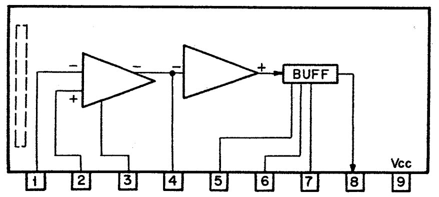
2SC1963


2SC2549

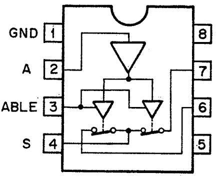


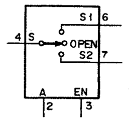
2SK125

BX315 (SONY)
BX315 A (SONY)
VIDEO OUTPUT AMPLIFIER (PHASE INVERTED)
— REAR VIEW —


BUFF
Vcc
1
2
3
4
5
6
7
8
9

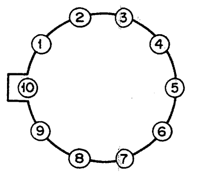
TL607CP (TI) SN72607P (TI)
MOS ANALOG SWITCH
— TOP VIEW —


GND 1
A 2
ENABLE 3
S 4
8 V+
7 S2
6 S1
5 V−

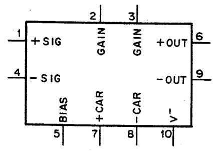

S1 6
4 S
OPEN
S2 7
A
EN
2
3

INPUTS		SW
A	EN	
X	L	OPEN
L	H	6 7
H	H	6 7

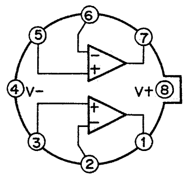
µA796 HC (FSC)
DOUBLE- BALANCED MOD/DEMOD.
— BOTTOM VIEW —


1
2
3
4
5
6
7
8
9
10

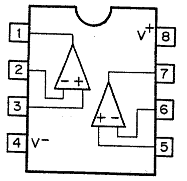
1 +SIGNAL INPUT
2 GAIN ADJUST
3 GAIN ADJUST
4 −SIGNAL INPUT
5 BIAS
6 +OUTPUT
7 +CARRIER INPUT
8 −CARRIER INPUT
9 −OUTPUT
10 V⁻


1 +SIG
4 −SIG
2 GAIN
3 GAIN
+OUT 6
−OUT 9
5 BIAS
7 +CAR
8 −CAR
10 V−

µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
— BOTTOM VIEW —

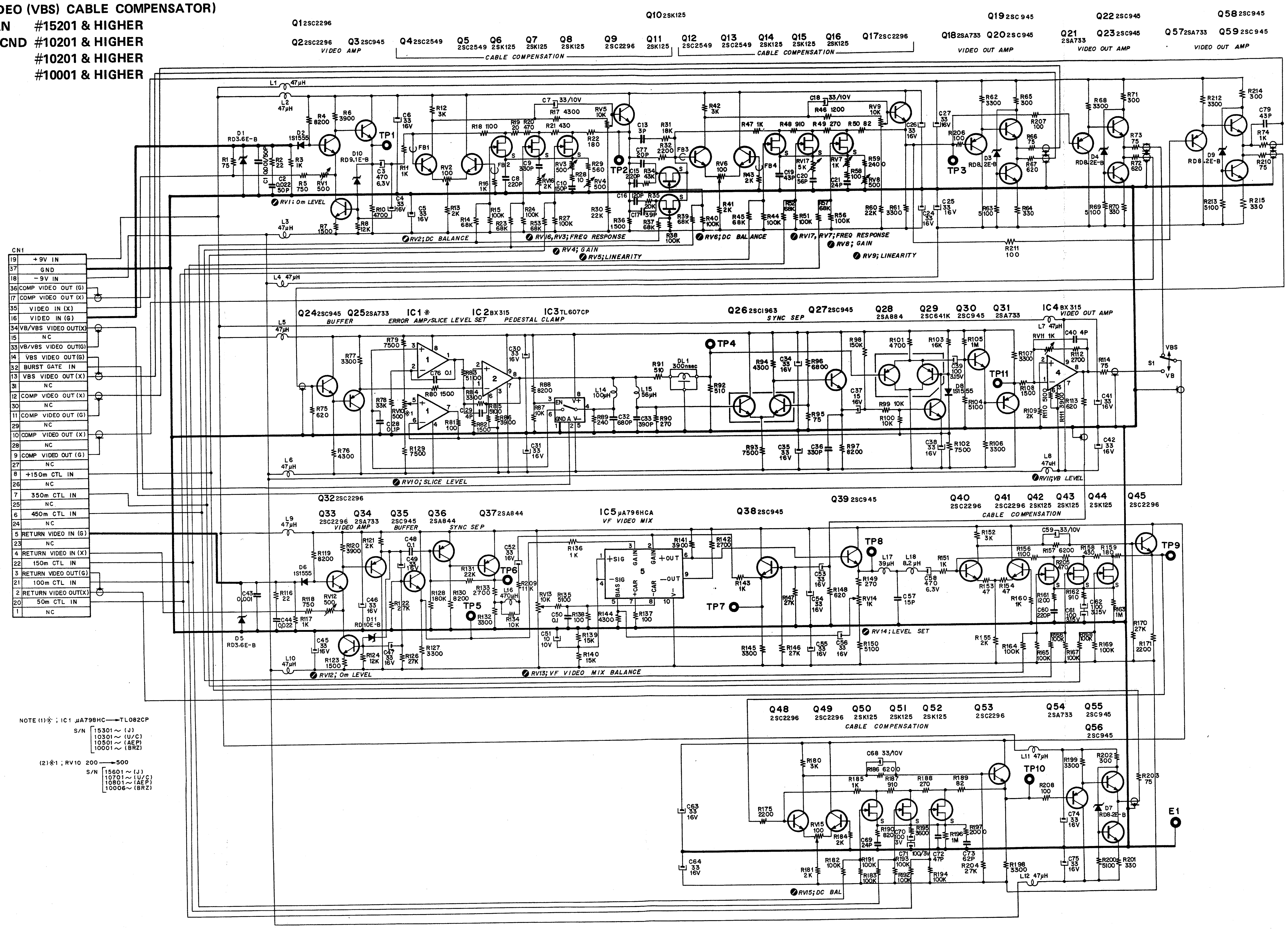

1
2
3
4 V−
5
6
7
V+ 8

TLO82CP (TI)
OPERATIONAL AMPLIFIER
(JFET- INPUT)
- TOP VIEW -


1
2
3
4 V−
V+ 8
7
6
5

VA-6 BOARD (VIDEO (VBS) CABLE COMPENSATOR)

EFFECTIVE JAPAN #15201 & HIGHER
EFFECTIVE USA/CND #10201 & HIGHER
EFFECTIVE AEP #10201 & HIGHER
EFFECTIVE BRZ #10001 & HIGHER

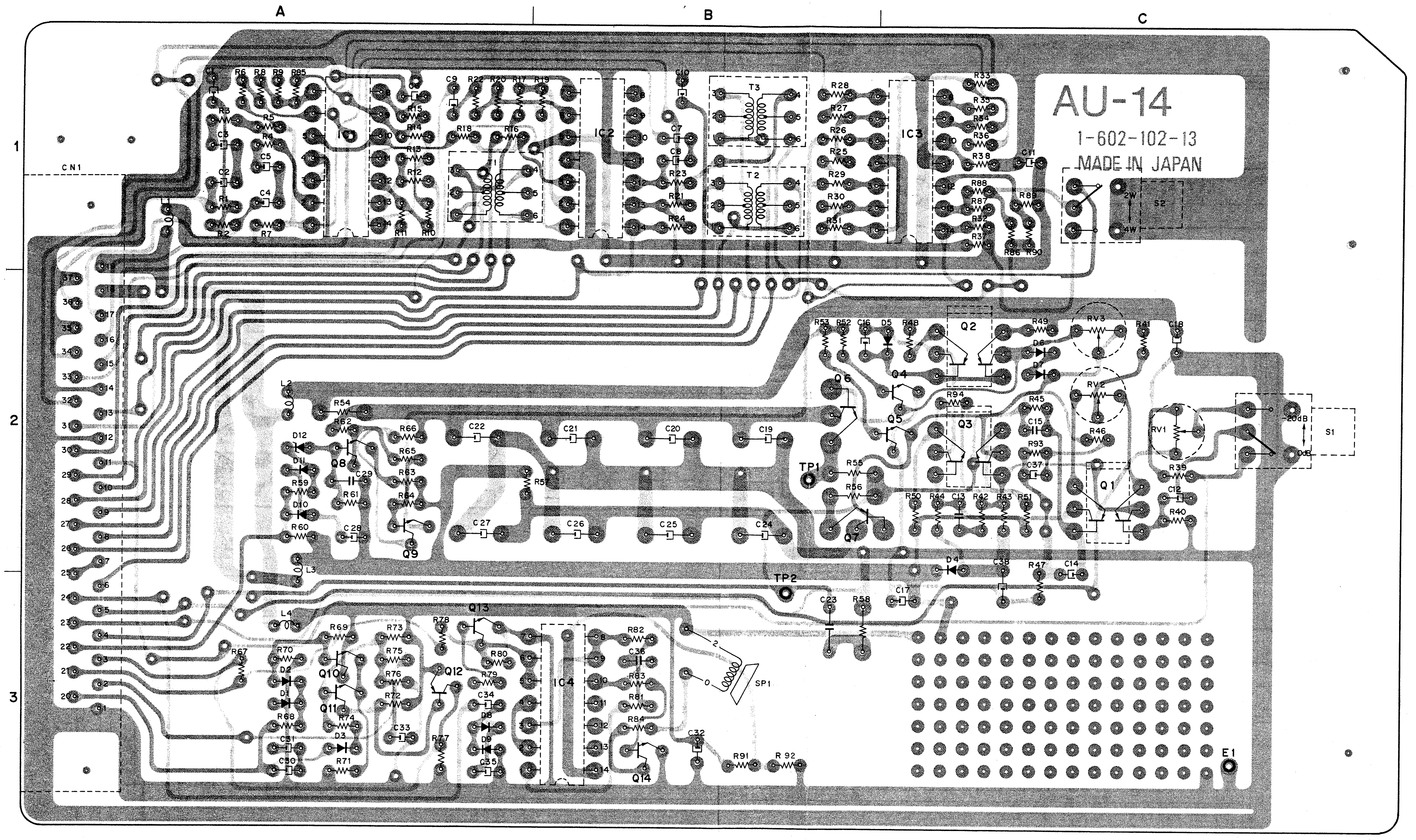

Q1 2SC2296
Q2 2SC2296
Q3 2SC945
VIDEO AMP
Q4 2SC2549
Q5 2SC2549
Q6 2SK125
Q7 2SK125
Q8 2SK125
Q9 2SC2296
Q10 2SK125
Q11 2SK125
CABLE COMPENSATION
Q12 2SC2549
Q13 2SC2549
Q14 2SK125
Q15 2SK125
Q16 2SK125
CABLE COMPENSATION
Q17 2SC2296
Q18 2SA733
Q19 2SC945
Q20 2SC945
VIDEO OUT AMP
Q21 2SA733
Q22 2SC945
Q23 2SC945
VIDEO OUT AMP
Q57 2SA733
Q58 2SC945
Q59 2SC945
VIDEO OUT AMP
TP1
TP2
TP3
RV1; 0m LEVEL
RV2; DC BALANCE
RV16, RV3; FREQ RESPONSE
RV4; GAIN
RV5; LINEARITY
RV6; DC BALANCE
RV17, RV7; FREQ RESPONSE
RV8; GAIN
RV9; LINEARITY
CN1
19 +9V IN
37 GND
18 −9V IN
36 COMP VIDEO OUT (G)
17 COMP VIDEO OUT (X)
35 VIDEO IN (X)
16 VIDEO IN (G)
34 VB/VBS VIDEO OUT(X)
15 NC
33 VB/VBS VIDEO OUT(G)
14 VBS VIDEO OUT(G)
32 BURST GATE IN
13 VBS VIDEO OUT(X)
31 NC
12 COMP VIDEO OUT (X)
30 NC
11 COMP VIDEO OUT (G)
29 NC
10 COMP VIDEO OUT (X)
28 NC
9 COMP VIDEO OUT (G)
27 NC
8 +150m CTL IN
26 NC
7 350m CTL IN
25 NC
6 450m CTL IN
24 NC
5 RETURN VIDEO IN (G)
23 NC
4 RETURN VIDEO IN (X)
22 150m CTL IN
3 RETURN VIDEO OUT(G)
21 100m CTL IN
2 RETURN VIDEO OUT(X)
20 50m CTL IN
1 NC
Q24 2SC945 BUFFER
Q25 2SA733
IC1 ※ ERROR AMP/SLICE LEVEL SET
IC2 BX315
IC3 TL607CP PEDESTAL CLAMP
Q26 2SC1963
Q27 2SC945 SYNC SEP
Q28 2SA884
Q29 2SC641K
Q30 2SC945
Q31 2SA733
IC4 BX315 VIDEO OUT AMP
TP4
TP11
DL1 300nsec
S1 VBS VB
RV10; SLICE LEVEL
RV11; VB LEVEL
Q32 2SC2296
Q33 2SC2296
Q34 2SA733
VIDEO AMP
Q35 2SC945 BUFFER
Q36 2SA844
Q37 2SA844 SYNC SEP
IC5 µA796HCA VF VIDEO MIX
Q38 2SC945
Q39 2SC945
Q40 2SC2296
Q41 2SC2296
Q42 2SK125
Q43 2SK125
CABLE COMPENSATION
Q44 2SK125
Q45 2SC2296
TP5
TP6
TP7
TP8
TP9
RV12; 0m LEVEL
RV13; VF VIDEO MIX BALANCE
RV14; LEVEL SET
Q48 2SC2296
Q49 2SC2296
Q50 2SK125
Q51 2SK125
Q52 2SK125
CABLE COMPENSATION
Q53 2SC2296
Q54 2SA733
Q55 2SC945
Q56 2SC945
TP10
E1
RV15; DC BAL

NOTE (1) ※ ; IC1 µA798HC ⟶ TL082CP
S/N
15301 ∼ (J)
10301 ∼ (U/C)
10501 ∼ (AEP)
10001 ∼ (BRZ)

(2) ※1 ; RV10 200 ⟶ 500
S/N
15601 ∼ (J)
10701 ∼ (U/C)
10801 ∼ (AEP)
10006 ∼ (BRZ)

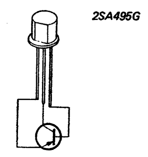
AU-14 BOARD (AUDIO SYSTEM)

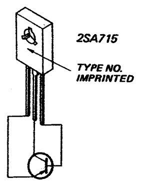
J : Serial No. Up to 15400
U/C : Serial No. Up to 10400
AEP : Serial No. Up to 10600

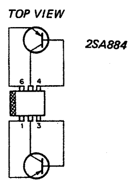

A
B
C
1
2
3
CN1
IC1
IC2
IC3
IC4
T1
T2
T3
AU-14
1-602-102-13
MADE IN JAPAN
S2
2W
4W
S1
-20dB
0dB
RV1
RV2
RV3
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
TP1
TP2
SP1
E1

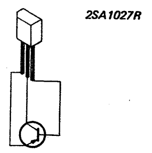
D1	A - 3
D2	A - 3
D3	A - 3
D4	C - 2
D5	C - 2
D6	C - 2
D7	C - 2
D8	A - 3
D9	A - 3
D10	A - 2
D11	A - 2
D12	A - 2
E1	C - 3
IC1	A - 1
IC2	B - 1
IC3	C - 1
IC4	B - 3
Q1	C - 2
Q2	C - 2
Q3	C - 2
Q4	C - 2
Q5	C - 2
Q6	B - 2
Q7	B - 2
Q8	A - 2
Q9	A - 2
Q10	A - 3
Q11	A - 3
Q12	A - 3
Q13	A - 3
Q14	B - 3
RV1	C - 2
RV2	C - 2
RV3	C - 2
TP1	B - 2
TP2	B - 3

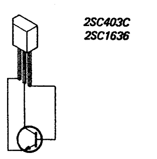
AU-14 -SOLDERING SIDE-
CCU-300
CCU-300P

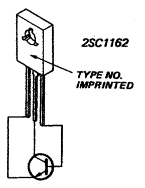


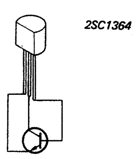

2SA715
TYPE NO. IMPRINTED

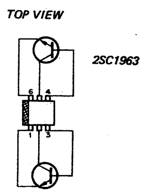

TOP VIEW
2SA884
6
4
1
3



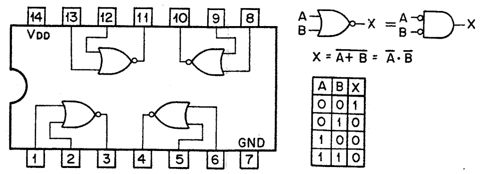

2SC403C
2SC1636


2SC1162
TYPE NO. IMPRINTED




TOP VIEW
2SC1963
6
4
1
3

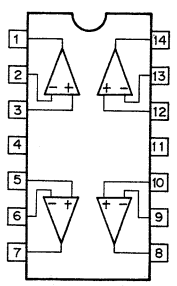
CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
μPD4001C (NEC)
C-MOS 2-INPUT NOR GATE
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7
A
B
X
A
B
X

$X = \overline{A+B} = \overline{A} \cdot \overline{B}$

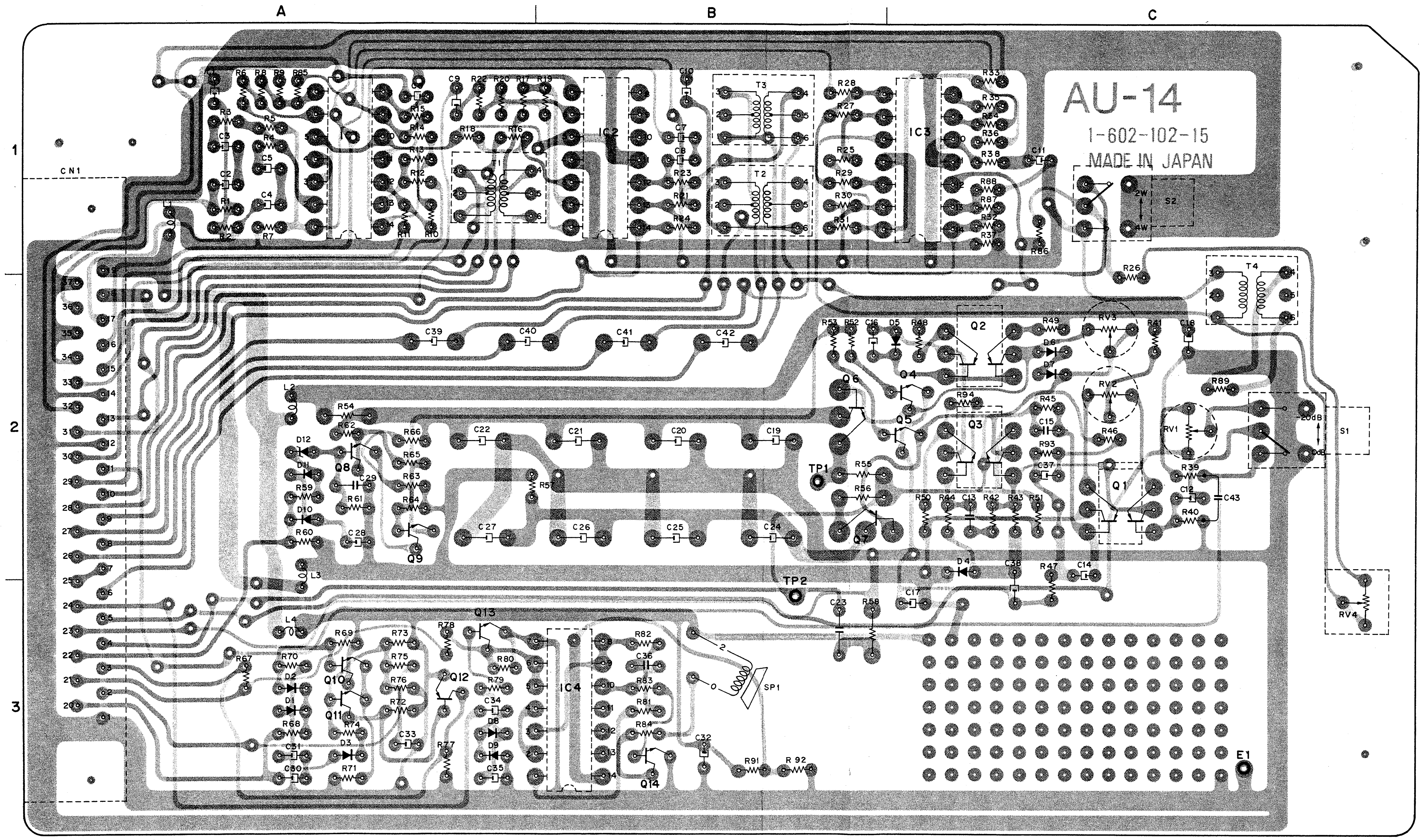
A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

TL084CN
OPERATIONAL AMPLIFIER
(J FET-INPUT)
—TOP VIEW—


1
2
3
4
5
6
7
14
13
12
11
10
9
8

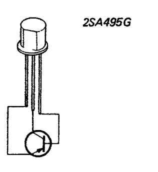
AU-14 BOARD (AUDIO SYSTEM)

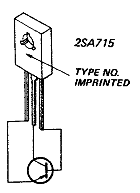
J	: Serial No.	15401	to	18100
U/C	: Serial No.	10401	to	11900
AEP	: Serial No.	10601	to	12700
BRZ	: Serial No.	10001	to	10405

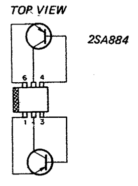

A
B
C
1
2
3
AU-14
1-602-102-15
MADE IN JAPAN
CN1
IC1
IC2
IC3
IC4
T1
T2
T3
T4
S1
S2
2W
4W
20dB
0dB
SP1
TP1
TP2
E1
RV1
RV2
RV3
RV4

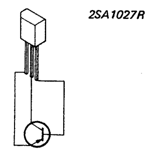
D1	A-3
D2	A-3
D3	A-3
D4	C-2
D5	C-2
D6	C-2
D7	C-2
D8	A-3
D9	A-3
D10	A-2
D11	A-2
D12	A-2
E1	C-3
IC1	A-1
IC2	B-1
IC3	C-1
IC4	B-3
Q1	C-2
Q2	C-2
Q3	C-2
Q4	C-2
Q5	C-2
Q6	B-2
Q7	B-2
Q8	A-2
Q9	A-2
Q10	A-3
Q11	A-3
Q12	A-3
Q13	A-3
Q14	B-3
RV1	C-2
RV2	C-2
RV3	C-2
RV4	C-3
TP1	B-2
TP2	B-3

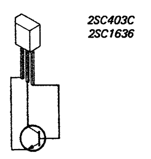
AU-14 -SOLDERING SIDE-
1-602-102-15,16
CCU-300
CCU-300P
CCU-300PM

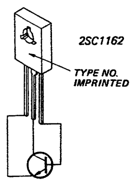

2SA495G

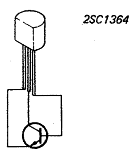

2SA715
TYPE NO. IMPRINTED

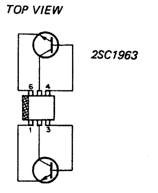

TOP VIEW
2SA884


2SA1027R

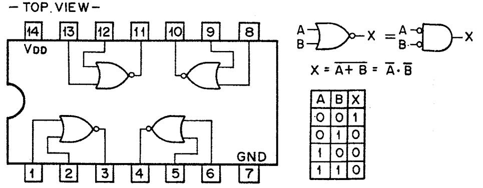

2SC403C
2SC1636


2SC1162
TYPE NO. IMPRINTED


2SC1364


TOP VIEW
2SC1963

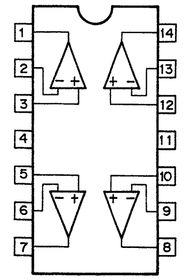
CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
μPD4001C (NEC)
C-MOS 2-INPUT NOR GATE
-TOP VIEW-


14
13
12
11
10
9
8
VDD
1
2
3
4
5
6
7
GND
A
B
X

$X = \overline{A+B} = \overline{A} \cdot \overline{B}$

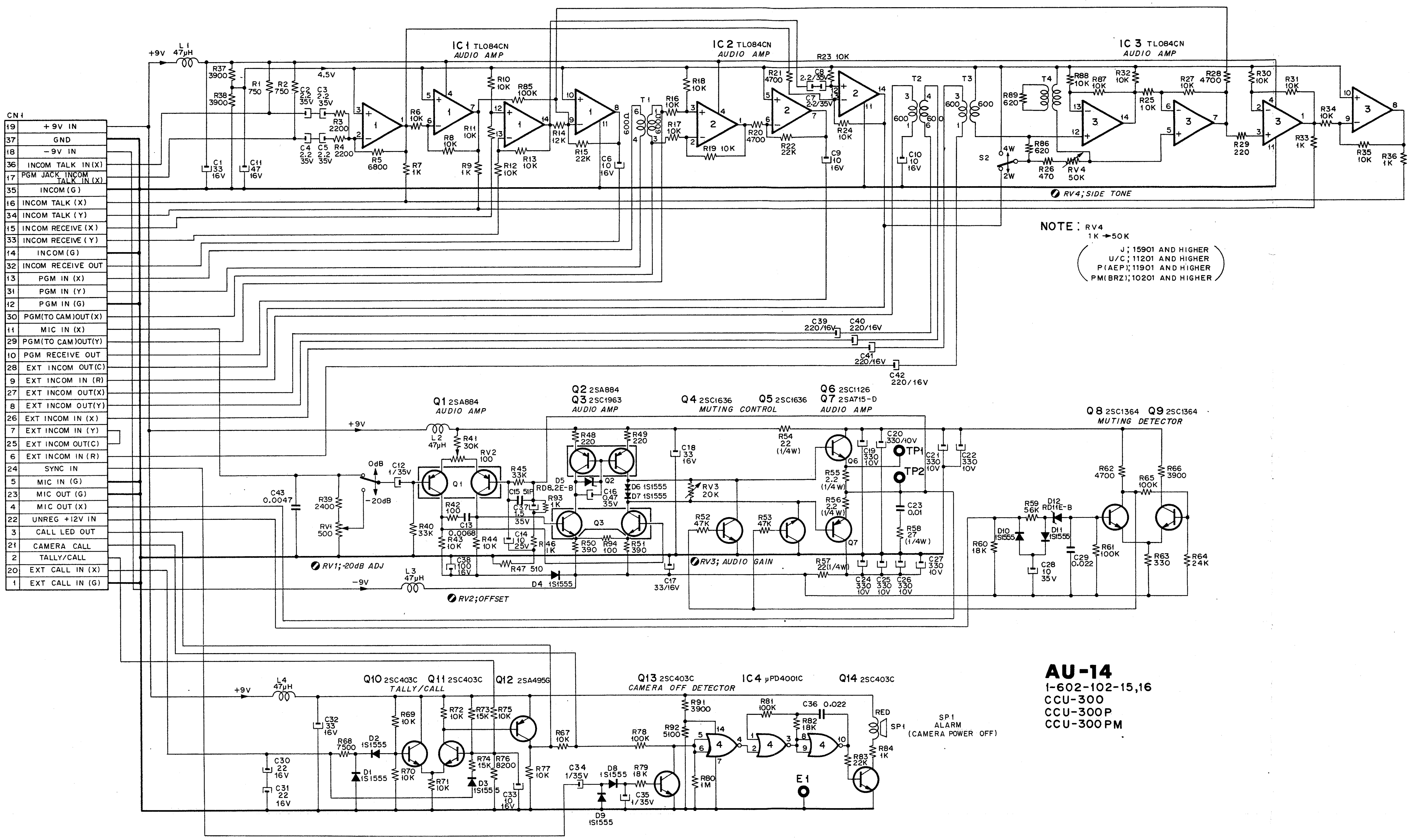
A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

TL084CN
OPERATIONAL AMPLIFIER
(J FET-INPUT)
-TOP VIEW-


1
2
3
4
5
6
7
8
9
10
11
12
13
14

J	: Serial No. Up to 18100
U/C	: Serial No. Up to 11900
AEP	: Serial No. Up to 12700
PRZ	: Serial No. Up to 10405

AU-14 BOARD (AUDIO SYSTEM)


CN1
19 +9V IN
37 GND
18 −9V IN
36 INCOM TALK IN(X)
17 PGM JACK INCOM TALK IN(X)
35 INCOM(G)
16 INCOM TALK (X)
34 INCOM TALK (Y)
15 INCOM RECEIVE (X)
33 INCOM RECEIVE (Y)
14 INCOM(G)
32 INCOM RECEIVE OUT
13 PGM IN (X)
31 PGM IN (Y)
12 PGM IN (G)
30 PGM(TO CAM)OUT(X)
11 MIC IN (X)
29 PGM(TO CAM)OUT(Y)
10 PGM RECEIVE OUT
28 EXT INCOM OUT(C)
9 EXT INCOM IN (R)
27 EXT INCOM OUT(X)
8 EXT INCOM OUT(Y)
26 EXT INCOM IN (X)
7 EXT INCOM IN (Y)
25 EXT INCOM OUT(C)
6 EXT INCOM IN (R)
24 SYNC IN
5 MIC IN (G)
23 MIC OUT (G)
4 MIC OUT (X)
22 UNREG +12V IN
3 CALL LED OUT
21 CAMERA CALL
2 TALLY/CALL
20 EXT CALL IN (X)
1 EXT CALL IN (G)
+9V
L1 47μH
IC1 TL084CN AUDIO AMP
IC2 TL084CN AUDIO AMP
IC3 TL084CN AUDIO AMP
T1
T2
T3
T4
S2 4W 2W
RV4; SIDE TONE
Q1 2SA884 AUDIO AMP
Q2 2SA884
Q3 2SC1963 AUDIO AMP
Q4 2SC1636 MUTING CONTROL
Q5 2SC1636
Q6 2SC1126
Q7 2SA715-D AUDIO AMP
Q8 2SC1364
Q9 2SC1364 MUTING DETECTOR
0dB
−20dB
RV1; −20dB ADJ
RV2; OFFSET
RV3; AUDIO GAIN
TP1
TP2
−9V
L3 47μH
Q10 2SC403C
Q11 2SC403C TALLY/CALL
Q12 2SA495G
Q13 2SC403C CAMERA OFF DETECTOR
IC4 μPD4001C
Q14 2SC403C
SP1 ALARM (CAMERA POWER OFF)
RED
E1

NOTE: RV4
1K → 50K
J; 15901 AND HIGHER
U/C; 11201 AND HIGHER
P(AEP); 11901 AND HIGHER
PM(BRZ); 10201 AND HIGHER

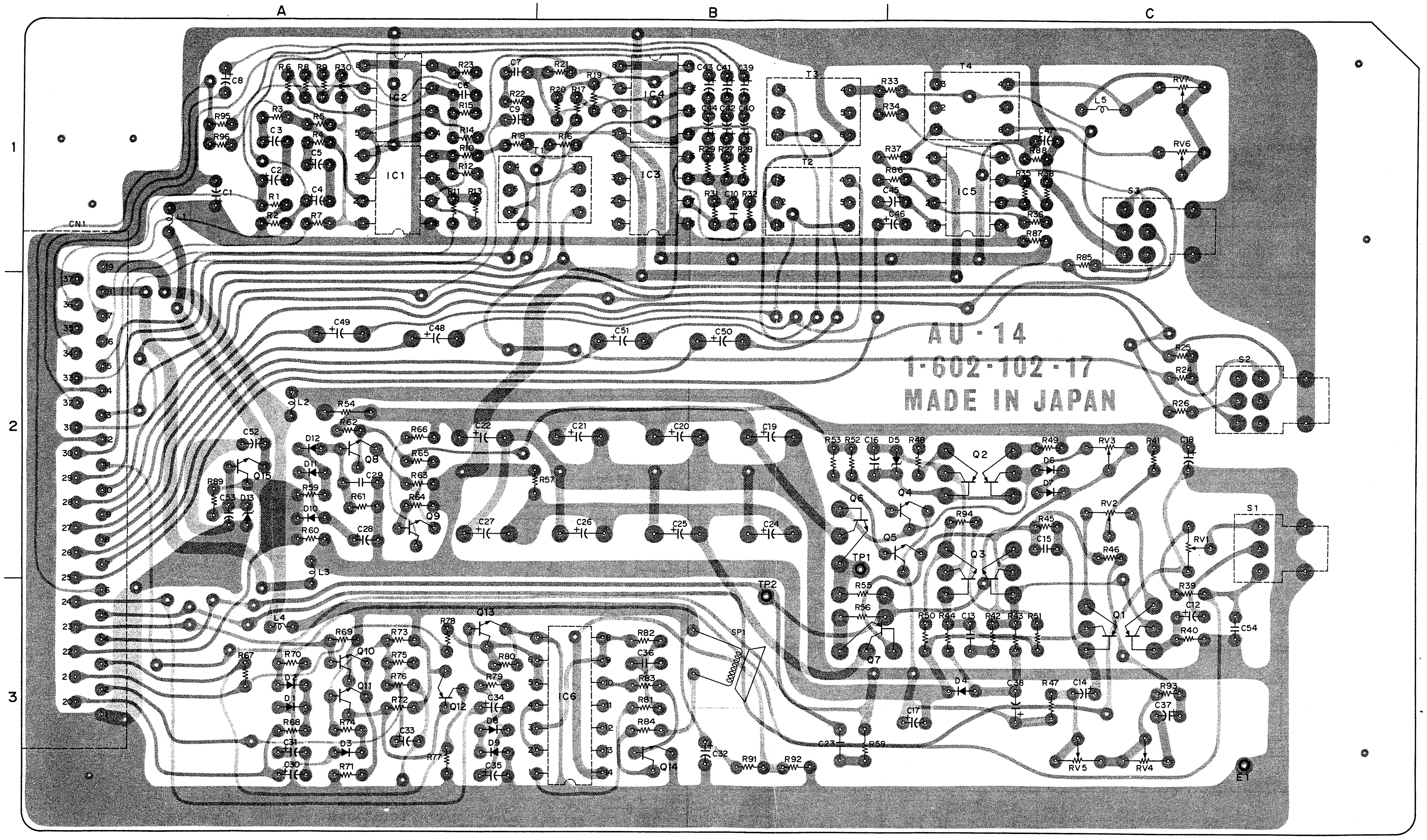
AU-14
1-602-102-15,16
CCU-300
CCU-300P
CCU-300PM

NOTE: C43 ADD
0.0047
J: 15901 AND HIGHER
U/C: 11301 AND HIGHER
P(AEP): 11901 AND HIGHER
PM(BRZ): 10201 AND HIGHER

NOTE: R74
7500 → 15K
J: 15801 AND HIGHER
U/C: 11111 AND HIGHER
P(AEP): 11701 AND HIGHER
PM(BRZ): 10101 AND HIGHER

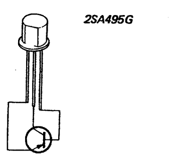
AU-14 BOARD (AUDIO SYSTEM)

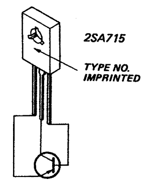
J	: Serial No. 18101 and higher
U/C	: Serial No. 11901 and higher
AEP	: Serial No. 12701 and higher
BRZ	: Serial No. 10406 and higher

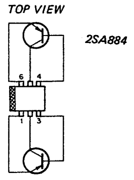

A
B
C
1
2
3
CN1
AU-14
1-602-102-17
MADE IN JAPAN
IC1
IC2
IC3
IC4
IC5
IC6
T1
T2
T3
T4
S1
S2
S3
L1
L2
L3
L4
L5
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
RV1
RV2
RV3
RV4
RV5
RV6
RV7
TP1
TP2
SP1
E1

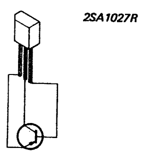
AU-14 -SOLDERING SIDE-
1-602-102-17
CCU-300
CCU-300P
CCU-300PM

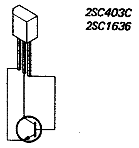
CN1	A-2
D1	A-3
D2	A-3
D3	A-3
D4	C-3
D5	C-2
D6	C-2
D7	C-2
D8	A-3
D9	A-3
D10	A-2
D11	A-2
D12	A-2
D13	A-2
E1	C-3
IC1	A-1
IC2	A-1
IC3	B-1
IC4	B-1
IC5	C-1
IC6	B-3
Q1	C-3
Q2	C-2
Q3	C-2
Q4	B-2
Q5	C-2
Q6	C-2
Q7	B-3
Q8	A-2
Q9	A-2
Q10	A-3
Q11	A-3
Q12	A-3
Q13	A-3
Q14	B-3
Q15	A-2
RV1	C-2
RV2	C-2
RV3	C-2
RV4	C-3
RV5	C-3
RV6	C-1
RV7	C-1
S1	C-2
S2	C-2
S3	C-1
T1	B-1
T2	B-1
T3	B-1
T4	C-1
TP1	B-2
TP2	B-3

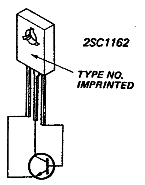


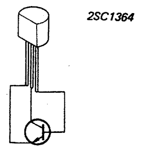

2SA715
TYPE NO. IMPRINTED

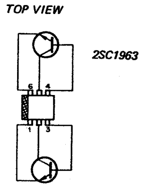

TOP VIEW
2SA884
6
4
1
3



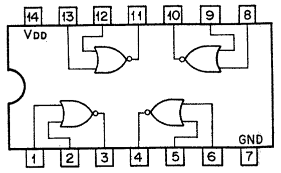

2SC403C
2SC1636

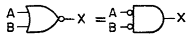

2SC1162
TYPE NO. IMPRINTED




TOP VIEW
2SC1963
6
4
1
3

CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
μPD4001C (NEC)
C-MOS 2-INPUT NOR GATE
-TOP VIEW-

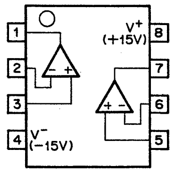

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$X = \overline{A+B} = \overline{A} \cdot \overline{B}$

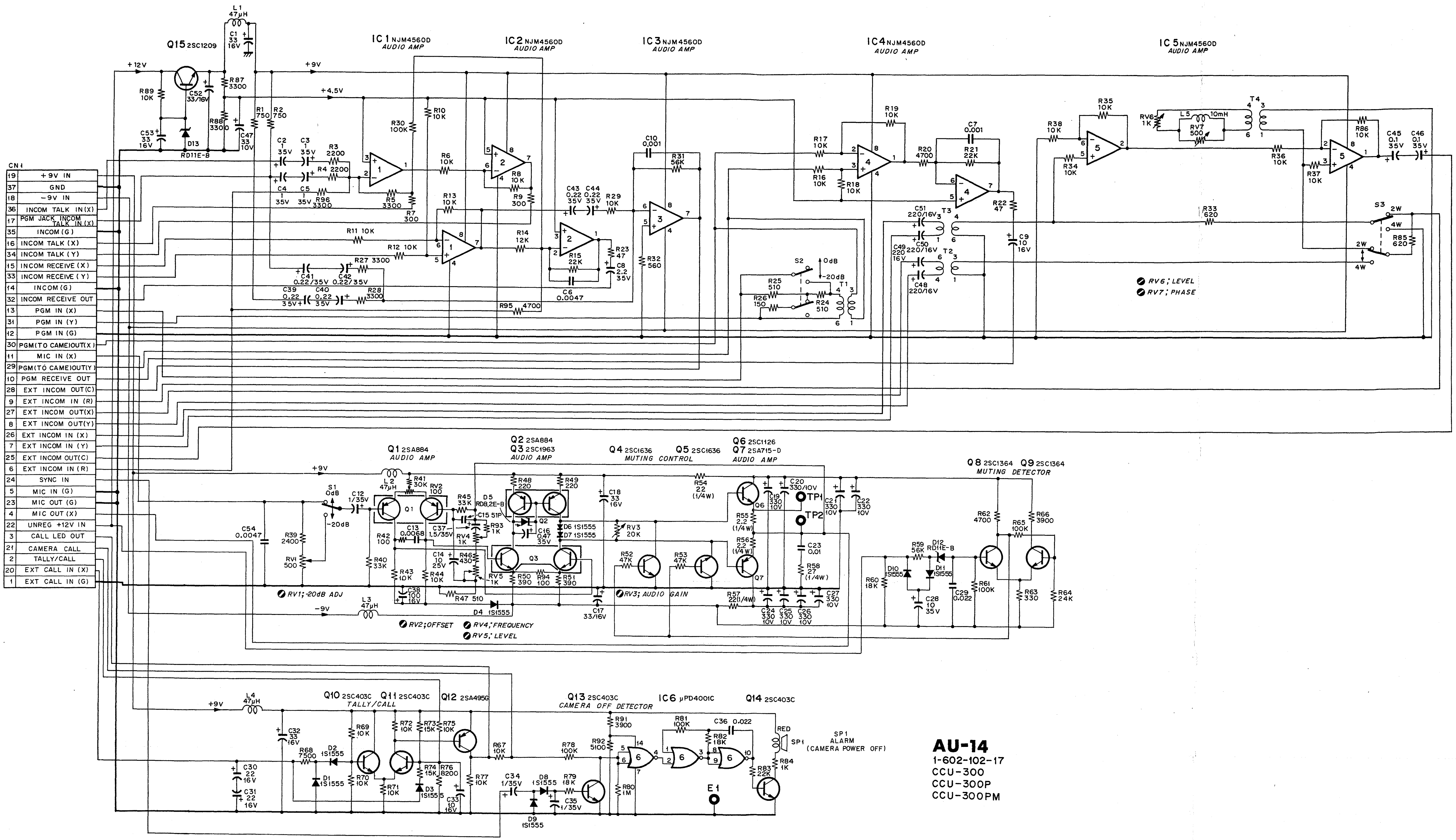
A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

NJM4560D (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-


1
2
3
4
8
7
6
5
V+ (+15V)
V− (−15V)

AU-14 BOARD (AUDIO SYSTEM)

J	: Serial No. 18101 and higher
U/C	: Serial No. 11901 and higher
AEP	: Serial No. 12701 and higher
PRZ	: Serial No. 10406 and higher

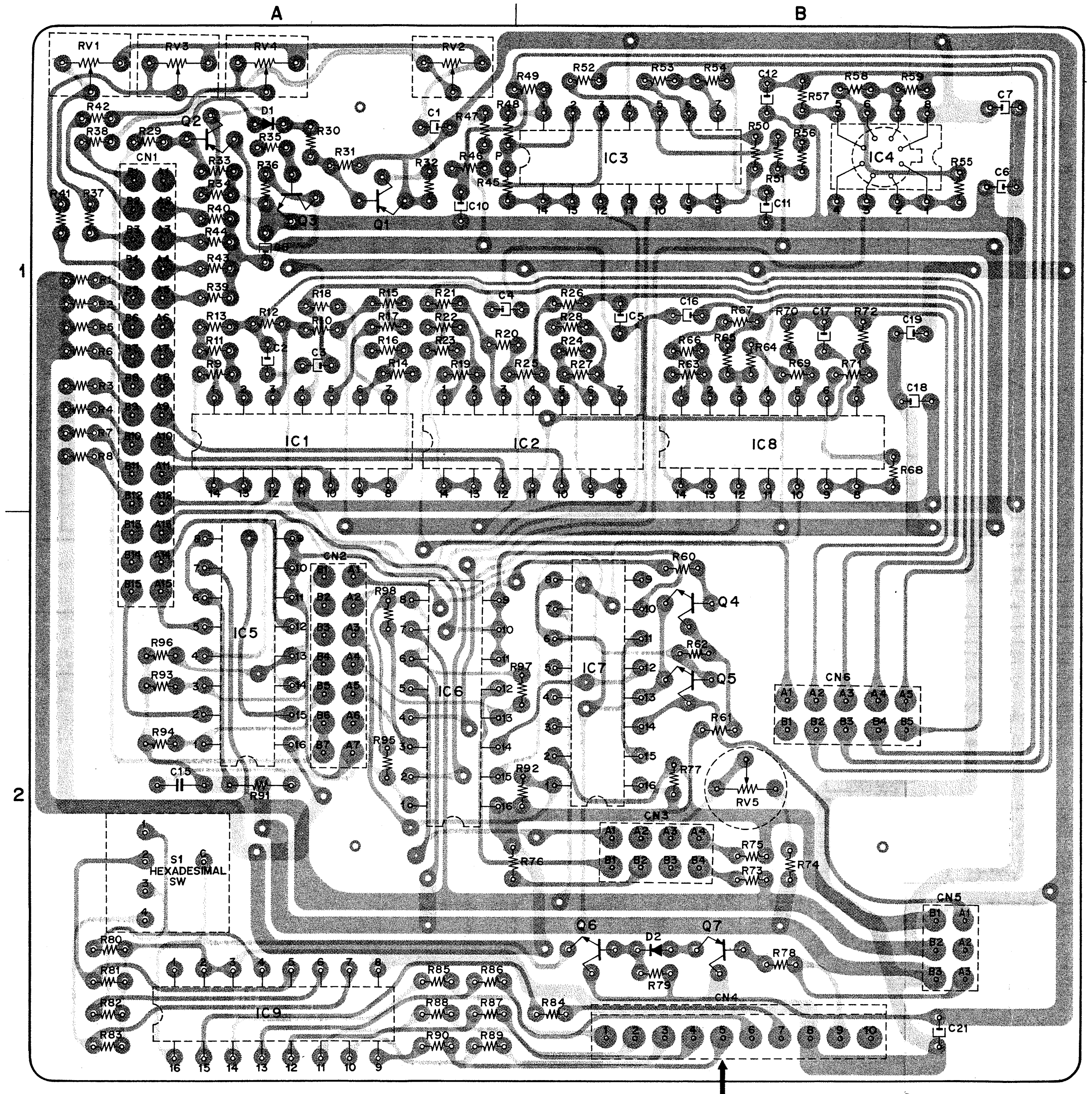

CN1
19 +9V IN
37 GND
18 -9V IN
36 INCOM TALK IN(X)
17 PGM JACK INCOM TALK IN(X)
35 INCOM(G)
16 INCOM TALK (X)
34 INCOM TALK (Y)
15 INCOM RECEIVE (X)
33 INCOM RECEIVE (Y)
14 INCOM (G)
32 INCOM RECEIVE OUT
13 PGM IN (X)
31 PGM IN (Y)
12 PGM IN (G)
30 PGM(TO CAME)OUT(X)
11 MIC IN (X)
29 PGM(TO CAME)OUT(Y)
10 PGM RECEIVE OUT
28 EXT INCOM OUT(C)
9 EXT INCOM IN (R)
27 EXT INCOM OUT(X)
8 EXT INCOM OUT(Y)
26 EXT INCOM IN (X)
7 EXT INCOM IN (Y)
25 EXT INCOM OUT(C)
6 EXT INCOM IN (R)
24 SYNC IN
5 MIC IN (G)
23 MIC OUT (G)
4 MIC OUT (X)
22 UNREG +12V IN
3 CALL LED OUT
21 CAMERA CALL
2 TALLY/CALL
20 EXT CALL IN (X)
1 EXT CALL IN (G)
Q15 2SC1209
L1 47μH
C1 33 16V
+12V
+9V
+4.5V
IC1 NJM4560D AUDIO AMP
IC2 NJM4560D AUDIO AMP
IC3 NJM4560D AUDIO AMP
IC4 NJM4560D AUDIO AMP
IC5 NJM4560D AUDIO AMP
T1
T2
T3
T4
L5 10mH
S2 0dB -20dB
S3 2W 4W
RV6; LEVEL
RV7; PHASE
Q1 2SA884 AUDIO AMP
Q2 2SA884
Q3 2SC1963 AUDIO AMP
Q4 2SC1636 MUTING CONTROL
Q5 2SC1636
Q6 2SC1126
Q7 2SA715-D AUDIO AMP
Q8 2SC1364
Q9 2SC1364 MUTING DETECTOR
S1 0dB -20dB
TP1
TP2
RV1; -20dB ADJ
RV2; OFFSET
RV3; AUDIO GAIN
RV4; FREQUENCY
RV5; LEVEL
-9V
L3 47μH
L4 47μH
Q10 2SC403C
Q11 2SC403C TALLY/CALL
Q12 2SA495G
Q13 2SC403C CAMERA OFF DETECTOR
IC6 μPD4001C
Q14 2SC403C
RED
SP1 ALARM (CAMERA POWER OFF)
E1

AU-14
1-602-102-17
CCU-300
CCU-300P
CCU-300PM

NOTE: C43 ADD
0.0047
J : 15901 AND HIGHER
U/C : 11301 AND HIGHER
P(AEP) : 11901 AND HIGHER
PM(BRZ) : 10201 AND HIGHER

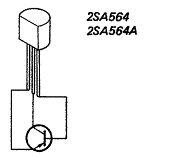
NOTE: R74
7500 → 15K
J : 15801 AND HIGHER
U/C : 11111 AND HIGHER
P(AEP): 11701 AND HIGHER
PM(BRZ): 10101 AND HIGHER

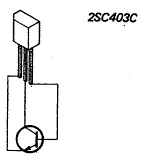
IF-29 BOARD (CAMERA CONTROL SYSTEM 2)
LP-10 BOARD


A
B
1
2
RV1
RV3
RV4
RV2
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
CN1
CN2
CN3
CN4
CN5
CN6
Q1
Q2
Q3
Q4
Q5
Q6
Q7
D1
D2
RV5
S1 HEXADESIMAL SW

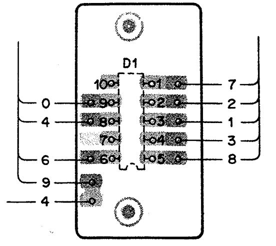
IF-29 —SOLDERING SIDE—

CN1	A-1, 2
CN2	A-2
CN3	B-2
CN4	B-2
CN5	B-2
CN6	B-2
D1	A-1
D2	B-2
IC1	A-1
IC2	A, B-1
IC3	B-1
IC4	B-1
IC5	A-2
IC6	A-2
IC7	B-2
IC8	B-1
IC9	A-2
Q1	A-1
Q2	A-1
Q3	A-1
Q4	B-2
Q5	B-2
Q6	B-2
Q7	B-2
RV1	A-1
RV2	A-1
RV3	A-1
RV4	A-1
RV5	B-2

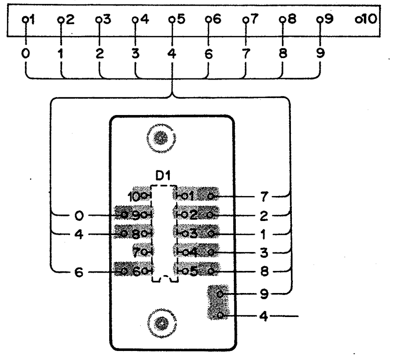

2SA564
2SA564A


2SC403C

FORMER

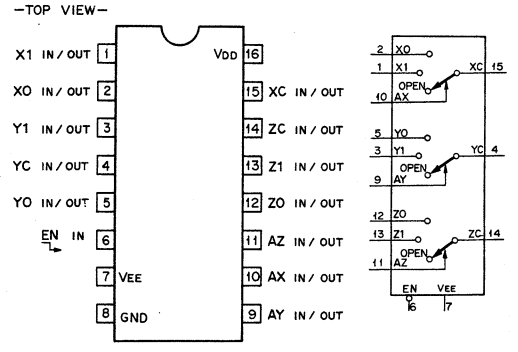

D1
0
4
6
9
4
7
2
1
3
8

LP-10


1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 6 7 8 9
D1
0
4
6
7
2
1
3
8
9
4

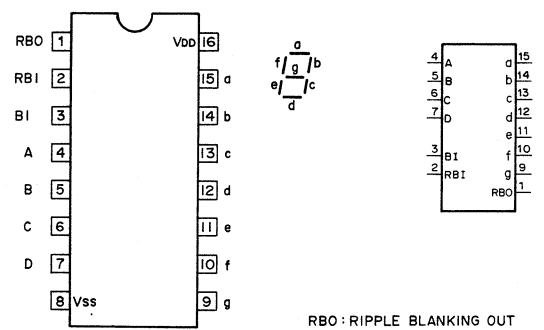
LP-10

CD4053BE (RCA)
MC14053BCP (MOTOROLA)
TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
—TOP VIEW—


X1 IN/OUT 1
XO IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
YO IN/OUT 5
EN IN 6
7 VEE
8 GND
VDD 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 ZO IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
OPEN
EN
VEE

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

TC5022BP (TOSHIBA)
C-MOS BCD-TO-SEVEN-SEGMENT DECODER/DRIVER
—TOP VIEW—

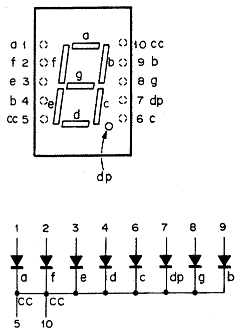

RBO 1
RBI 2
BI 3
A 4
B 5
C 6
D 7
8 Vss
VDD 16
15 a
14 b
13 c
12 d
11 e
10 f
9 g
RBI
RBO

RBO : RIPPLE BLANKING OUT
RBI : RIPPLE BLANKING IN
BI : BLANKING IN

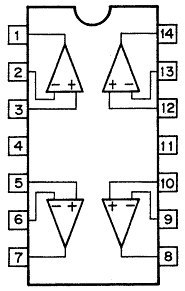
INPUT						OUTPUT								DISPLAY (HEXADECIMAL)	DECIMAL
BI	RBI	A	B	C	D	a	b	c	d	e	f	g	RBO		
1	X	X	X	X	X	0	0	0	0	0	0	0	*	BLANK	
0	1	0	0	0	0	0	0	0	0	0	0	0	1	BLANK	
0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
0	X	1	0	0	0	0	1	1	0	0	0	0	0	1	1
0	X	0	1	0	0	1	1	0	1	1	0	1	0	2	2
0	X	1	1	0	0	1	1	1	1	0	0	1	0	3	3
0	X	0	0	1	0	0	1	1	0	0	1	1	0	4	4
0	X	1	0	1	0	1	0	1	1	0	1	1	0	5	5
0	X	0	1	1	0	1	0	1	1	1	1	1	0	6	6
0	X	1	1	1	0	1	1	1	0	0	1	0	0	7	7
0	X	0	0	0	1	1	1	1	1	1	1	1	0	8	8
0	X	1	0	0	1	1	1	1	1	0	1	1	0	9	9
0	X	0	1	0	1	1	1	1	1	1	1	0	0	0	10
0	X	1	1	0	1	0	1	1	0	0	0	0	0	1	11
0	X	0	0	1	1	1	1	0	1	1	0	1	0	2	12
0	X	1	0	1	1	1	1	1	1	0	0	1	0	3	13
0	X	0	1	1	1	0	1	1	0	0	1	1	0	4	14
0	X	1	1	1	1	1	0	1	1	0	1	1	0	5	15

X : DON'T CARE
* : UNDETERMINED

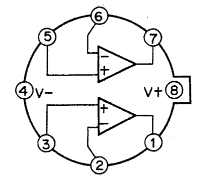
TLR312 (TOSHBA)
7-SEGMENT LED (RED)
—TOP VIEW—


a 1
f 2
e 3
b 4
cc 5
10 cc
9 b
8 g
7 dp
6 c
dp
1 2 3 4 6 7 8 9
a f e d c dp g b
cc cc
5 10

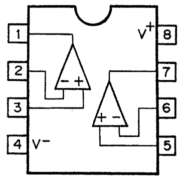
TL064CN (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)


1
2
3
4
5
6
7
14
13
12
11
10
9
8

µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
—BOTTOM VIEW—


1
2
3
4 V−
5
6
7
V+ 8

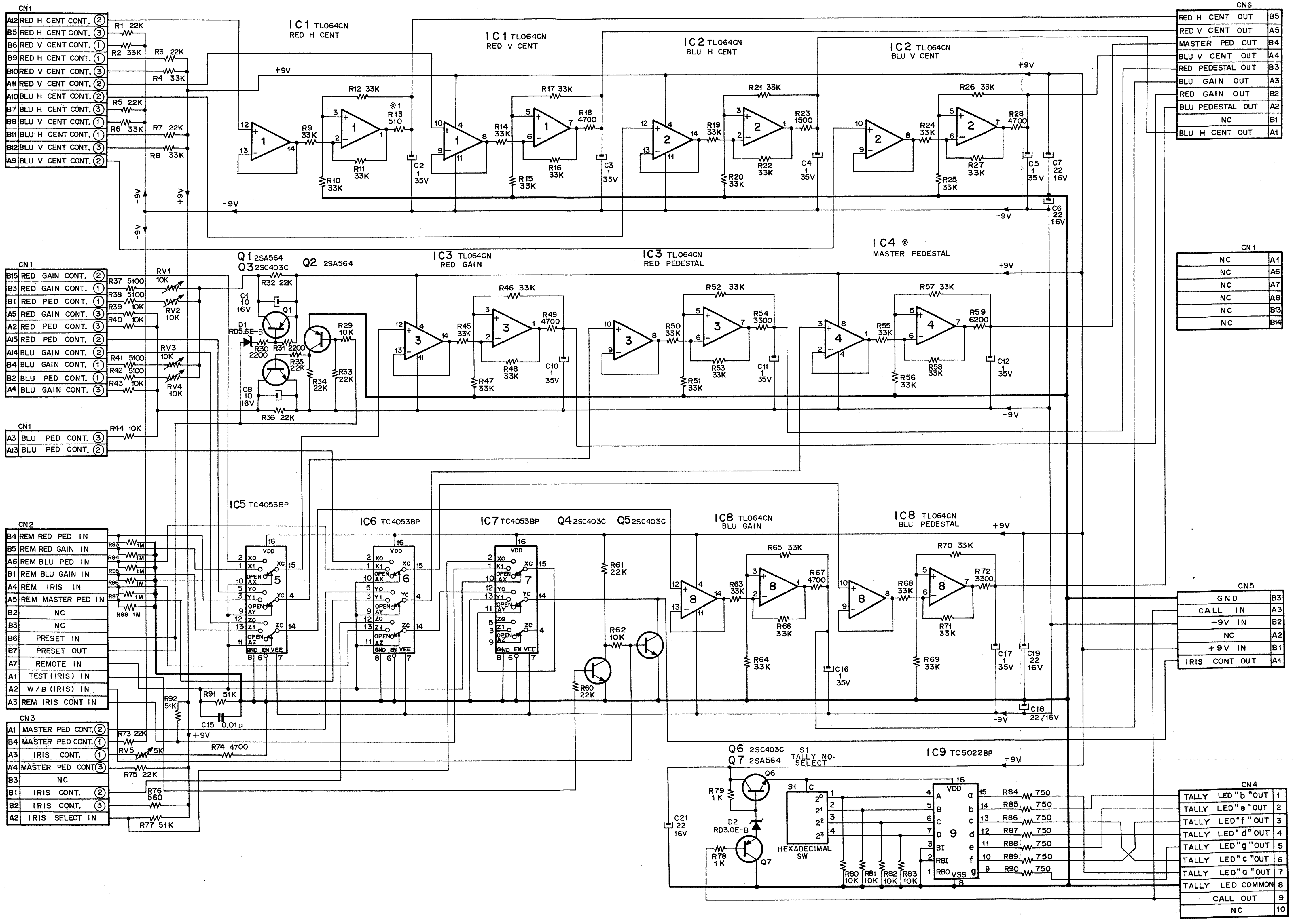
TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -


1
2
3
4 V−
V+ 8
7
6
5

IF-29 BOARD (CAMERA CONTROL SYSTEM 2)

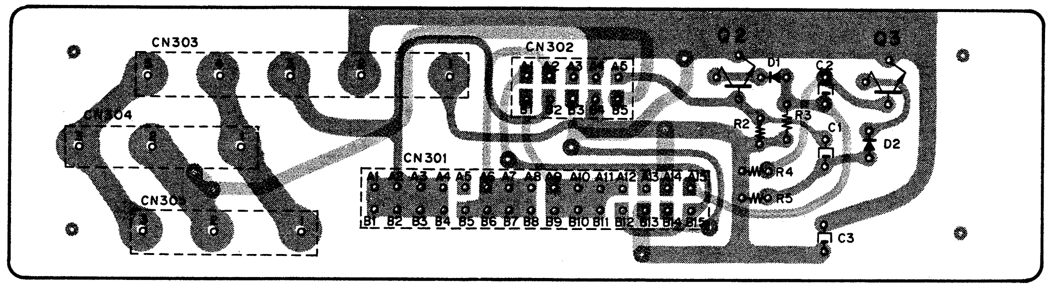
NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※	IC4 µA798HC→TL082CP	10301～ (U/C) 15301～ (J) 10501～ (PAL)
※1	R13 1500→510	11501～ (U/C) 17001～ (J) 12501～ (PAL) 10301～ (PM)

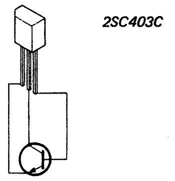


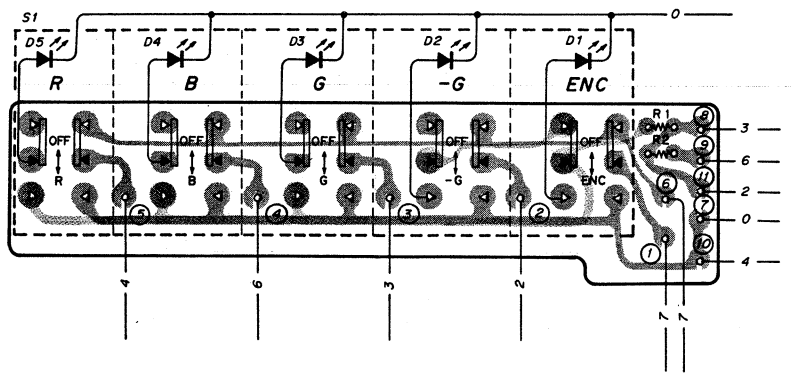
CN1
A12 RED H CENT CONT. ②
B5 RED H CENT CONT. ③
B6 RED V CENT CONT. ①
B9 RED H CENT CONT. ①
B10 RED V CENT CONT. ③
A11 RED V CENT CONT. ②
A10 BLU H CENT CONT. ②
B7 BLU H CENT CONT. ③
B8 BLU V CENT CONT. ①
B11 BLU H CENT CONT. ①
B12 BLU V CENT CONT. ③
A9 BLU V CENT CONT. ②
IC1 TL064CN RED H CENT
IC1 TL064CN RED V CENT
IC2 TL064CN BLU H CENT
IC2 TL064CN BLU V CENT
+9V
-9V
CN6
RED H CENT OUT B5
RED V CENT OUT A5
MASTER PED OUT B4
BLU V CENT OUT A4
RED PEDESTAL OUT B3
BLU GAIN OUT A3
RED GAIN OUT B2
BLU PEDESTAL OUT A2
NC B1
BLU H CENT OUT A1
CN1
B15 RED GAIN CONT. ②
B3 RED GAIN CONT. ①
B1 RED PED CONT. ①
A5 RED GAIN CONT. ③
A2 RED PED CONT. ③
A15 RED PED CONT. ②
A14 BLU GAIN CONT. ②
B4 BLU GAIN CONT. ①
B2 BLU PED CONT. ①
A4 BLU GAIN CONT. ③
Q1 2SA564
Q3 2SC403C
Q2 2SA564
D1 RD5.6E-B
IC3 TL064CN RED GAIN
IC3 TL064CN RED PEDESTAL
IC4 ※ MASTER PEDESTAL
CN1
NC A1
NC A6
NC A7
NC A8
NC B13
NC B14
CN1
A3 BLU PED CONT. ③
A13 BLU PED CONT. ②
IC5 TC4053BP
IC6 TC4053BP
IC7 TC4053BP
Q4 2SC403C
Q5 2SC403C
IC8 TL064CN BLU GAIN
IC8 TL064CN BLU PEDESTAL
CN2
B4 REM RED PED IN
B5 REM RED GAIN IN
A6 REM BLU PED IN
B1 REM BLU GAIN IN
A4 REM IRIS IN
A5 REM MASTER PED IN
B2 NC
B3 NC
B6 PRESET IN
B7 PRESET OUT
A7 REMOTE IN
A1 TEST (IRIS) IN
A2 W/B (IRIS) IN
A3 REM IRIS CONT IN
CN5
GND B3
CALL IN A3
-9V IN B2
NC A2
+9V IN B1
IRIS CONT OUT A1
CN3
A1 MASTER PED CONT. ②
B4 MASTER PED CONT. ①
A3 IRIS CONT. ①
A4 MASTER PED CONT. ③
B3 NC
B1 IRIS CONT. ②
B2 IRIS CONT. ③
A2 IRIS SELECT IN
Q6 2SC403C
Q7 2SA564
S1 TALLY NO. SELECT
D2 RD3.0E-B
HEXADECIMAL SW
IC9 TC5022BP
CN4
TALLY LED "b" OUT 1
TALLY LED "e" OUT 2
TALLY LED "f" OUT 3
TALLY LED "d" OUT 4
TALLY LED "g" OUT 5
TALLY LED "c" OUT 6
TALLY LED "a" OUT 7
TALLY LED COMMON 8
CALL OUT 9
NC 10

CN-19 BOARD
FU-9/9A BOARD
SW-42 BOARD


CN303
CN302
CN304
CN305
CN301
Q2
Q3
D1
D2
C1
C2
C3
R2
R3
R4
R5
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15

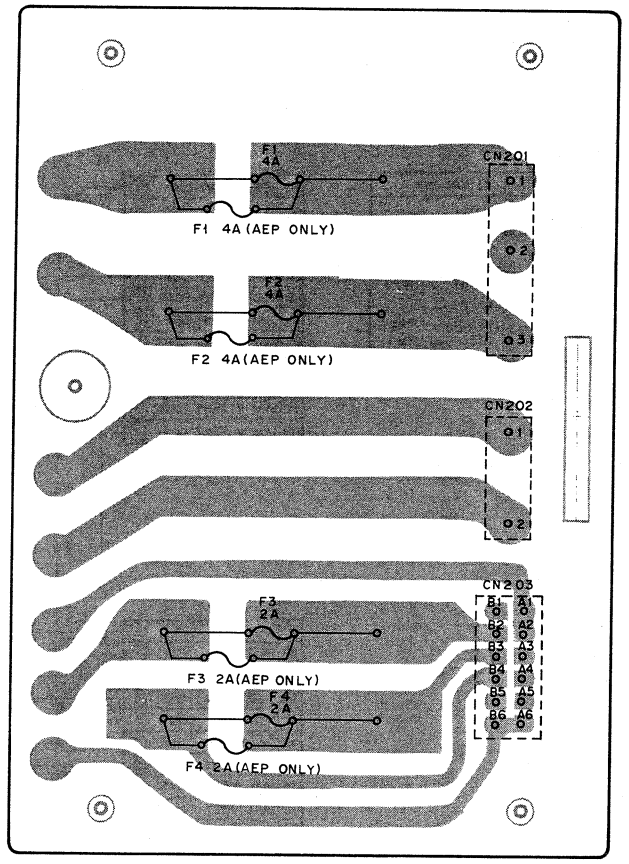
CN-19 -SOLDERING SIDE-




S1
D5
D4
D3
D2
D1
R
B
G
-G
ENC
OFF
R1
R2
3
6
2
0
4
7

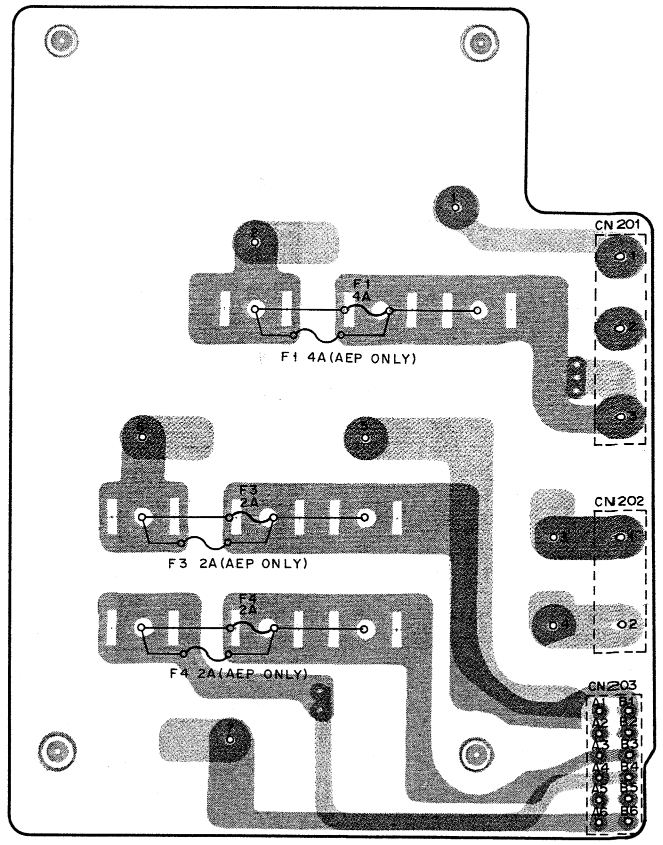
SW-42 -SOLDERING SIDE-

EFFECTIV JAPAN UP TO #15300
EFFECTIVE USA/CND UP TO #10300
EFFECTIVE AEP UP TO #10500


CN201
F1 4A
F1 4A (AEP ONLY)
F2 4A
F2 4A (AEP ONLY)
CN202
CN203
F3 2A
F3 2A (AEP ONLY)
F4 2A
F4 2A (AEP ONLY)
B1 A1
B2 A2
B3 A3
B4 A4
B5 A5
B6 A6

FU-9/9A -SOLDERING SIDE-

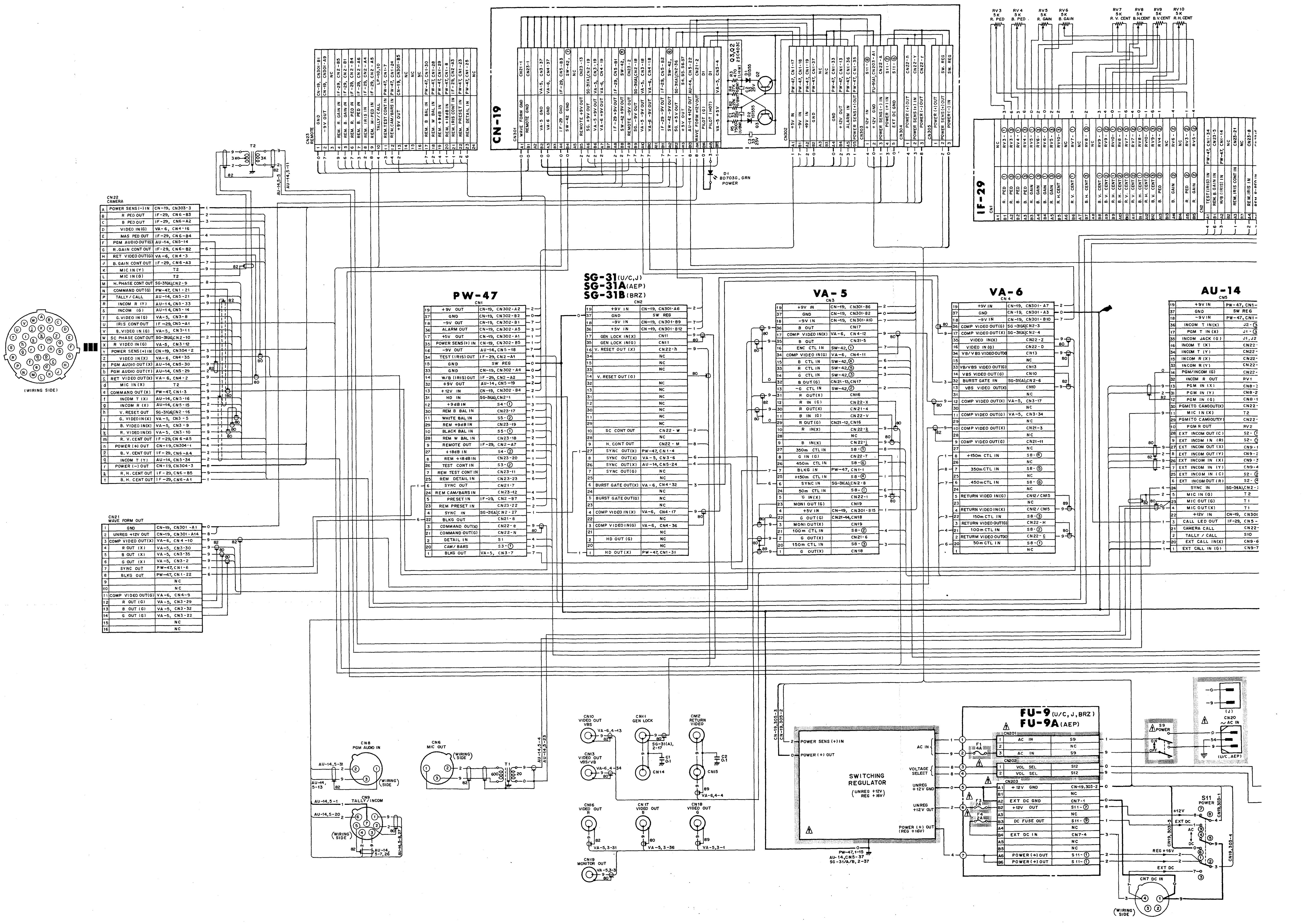
EFFECTIVE JAPAN #15301 AND HIGHER
EFFECTIVE USA/CND #10301 AND HIGHER
EFFECTIVE AEP #10501 AND HIGHER
EFFECTIVE BRZ #10001 AND HIGHER

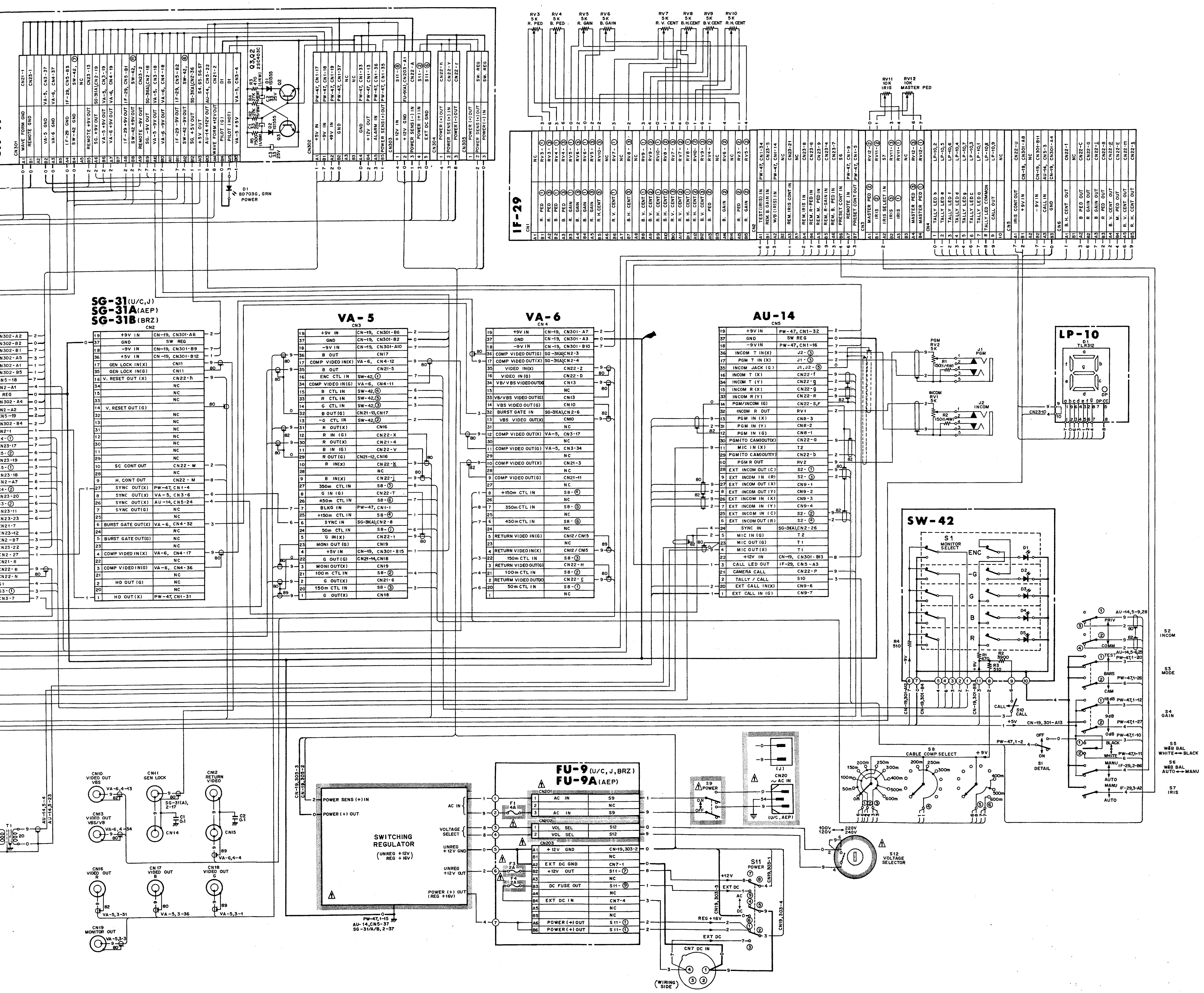

CN201
F1 4A
F1 4A(AEP ONLY)
CN202
F3 2A
F3 2A(AEP ONLY)
F4 2A
F4 2A(AEP ONLY)
CN203

FU-9/9A —SOLDERING SIDE—

CCU FRAME, CN-19, FU-9/9A, LP-10, SW-42

CCU FRAME, CN-19, FU-9/9A, LP-10, SW-42

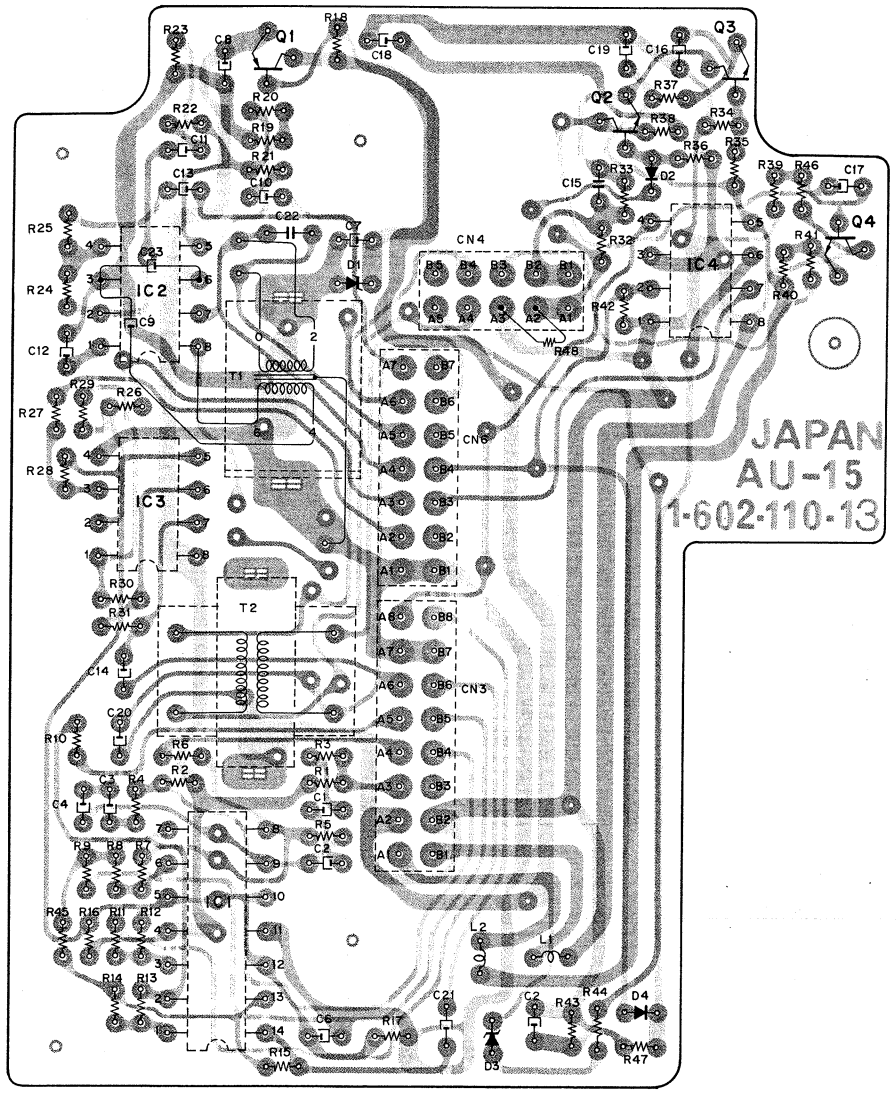

CN-19
RV3 5K R. PED
RV4 5K B. PED
RV5 5K R. GAIN
RV6 5K B. GAIN
RV7 5K R.V. CENT
RV8 5K B.H.CENT
RV9 5K B.V.CENT
RV10 5K R.H.CENT
IF-29
CN23 REMOTE
CN22 CAMERA
(WIRING SIDE)
CN21 WAVE FORM OUT
T2
D1 BD703G, GRN POWER
Q1, Q2 2SC403C
PW-47
SG-31(U/C,J)
SG-31A(AEP)
SG-31B(BRZ)
VA-5
VA-6
AU-14
CN8 PGM AUDIO IN
CN9 TALLY/INCOM
CN6 MIC OUT
T1
CN10 VIDEO OUT VBS
CN11 GEN LOCK
CN12 RETURN VIDEO
CN13 VIDEO OUT VBS/VB
CN14
CN15
CN16 VIDEO OUT R
CN17 VIDEO OUT G
CN18 VIDEO OUT B
CN19 MONITOR OUT
SWITCHING REGULATOR (UNREG +12V) (REG +16V)
POWER SENS (+) IN
POWER (+) OUT
AC IN
VOLTAGE SELECT
UNREG +12V GND
UNREG +12V OUT
POWER (+) OUT (REG +16V)
FU-9(U/C,J,BRZ)
FU-9A(AEP)
F1 4A
F3 2A
F4 2A
S9 POWER
CN20 AC IN
(J)
(U/C, AEP)
S11 POWER
EXT DC
REG +16V
+12V
CN7 DC IN
(WIRING SIDE)


SG-31(U/C,J)
SG-31A(AEP)
SG-31B(BRZ)
VA-5
VA-6
AU-14
IF-29
LP-10
SW-42
S1 MONITOR SELECT
FU-9(U/C,J,BRZ)
FU-9A(AEP)
SWITCHING REGULATOR
S8 CABLE COMP SELECT
S9 POWER
S11 POWER
S12 VOLTAGE SELECTOR
S2 INCOM
S3 MODE
S4 GAIN
S5 W&B BAL WHITE↔BLACK
S6 W&B BAL AUTO↔MANU
S7 IRIS
S10 CALL
CN7 DC IN
CN10 VIDEO OUT VBS
CN11 GEN LOCK
CN12 RETURN VIDEO
CN13 VIDEO OUT VBS/VB
CN16 VIDEO OUT
CN17 VIDEO OUT
CN18 VIDEO OUT
CN19 MONITOR OUT
CN20 AC IN
J1 PGM
J2 INCOM
D1 SG703G, GRN POWER
Q3,Q2 2SC403C
RV3 5K R.PED
RV4 5K B.PED
RV5 5K R.GAIN
RV6 5K B.GAIN
RV7 5K R.V.CENT
RV8 5K B.H.CENT
RV9 5K B.V.CENT
RV10 5K R.H.CENT
RV11 10K IRIS
RV12 10K MASTER PED

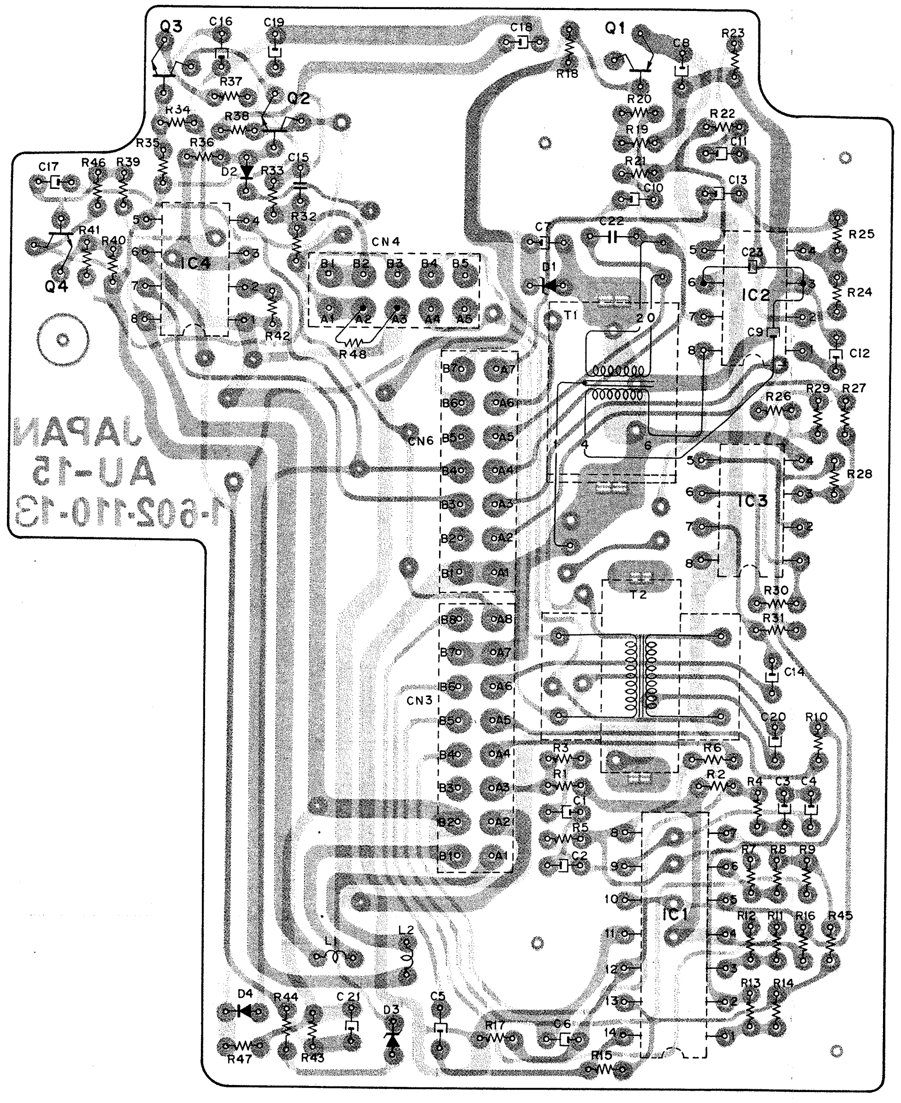
The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

AU-15 BOARD (AUDIO SYSTEM)

J	: Serial No. Up to 18100
U/C	: Serial No. UP to 11900
AEP	: Serial No. Up to 12700
PRZ	: Serial No. Up to 10405

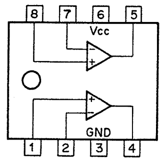

JAPAN
AU-15
1-602-110-13
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q4
T1
T2
CN3
CN4
CN6
L1
L2
D1
D2
D3
D4

AU-15 -SOLDERING SIDE-
1-602-110-13
CCU-300
CCU-300P
CCU-300PM

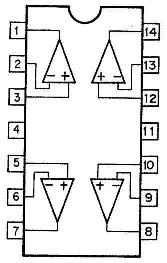

JAPAN
AU-15
1-602-110-13
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q4
T1
T2
CN3
CN4
CN6
L1
L2
D1
D2
D3
D4

AU-15 - COMPONENT SIDE -
1-602-110-13
CCU-300
CCU-300P
CCU-300PM

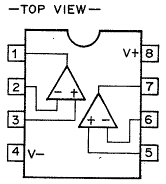
LM387N (NSC)
LOW NOISE AMPLIFIER
—TOP VIEW—


8
7
6
5
Vcc
GND
1
2
3
4

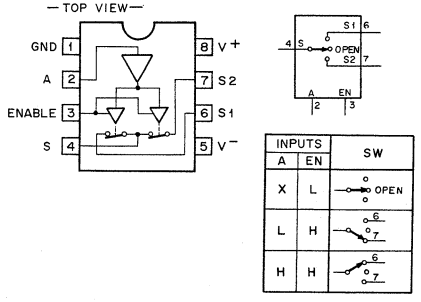
TLO84CN
OPERATIONAL AMPLIFIER
(J FET-INPUT)
—TOP VIEW—

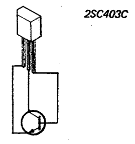

1
2
3
4
5
6
7
14
13
12
11
10
9
8

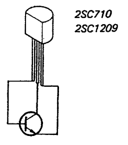
TLO72CP (TI)
TLO72ACP (TI)
TLO72BCP (TI)
OPERATIONAL AMPLIFIER
(LOW-NOISE, JFET-INPUT)
—TOP VIEW—

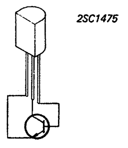

1
2
3
4 V−
V+ 8
7
6
5

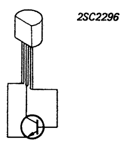
TL607CP (TI) SN72607P (TI)
MOS ANALOG SWITCH
—TOP VIEW—


GND 1
A 2
ENABLE 3
S 4
8 V+
7 S2
6 S1
5 V−
S1 6
4 S
OPEN
S2 7
A 2
EN 3
INPUTS
A
EN
SW
X
L
OPEN
L
H
6
7
H
H
6
7


2SC403C

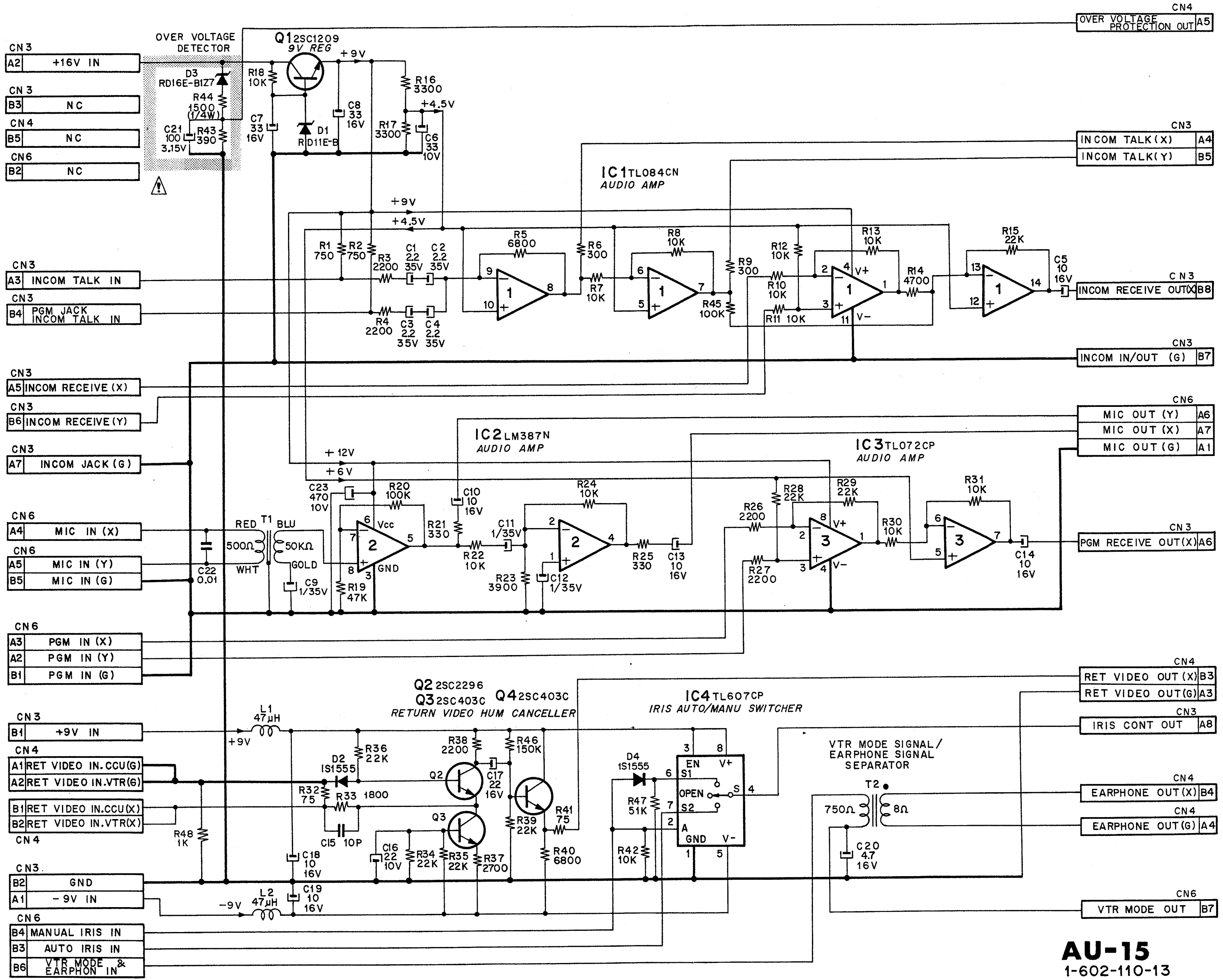

2SC710
2SC1209


2SC1475


2SC2296

AU-15 BOARD (AUDIO SYSTEM)

J	: Serial No. Up to 18100
U/C	: Serial No. Up to 11900
AEP	: Serial No. Up to 12700
PRZ	: Serial No. UP to 10405


CN3 A2 +16V IN
CN3 B3 NC
CN4 B5 NC
CN6 B2 NC
OVER VOLTAGE DETECTOR
D3 RD16E-B1Z7
R44 4500 (1/4W)
C21 100 3.15V
R43 390
Q1 2SC1209 9V REG
+9V
R18 10K
C7 33 16V
C8 33 16V
D1 RD11E-B
R16 3300
+4.5V
R17 3300
C6 33 10V
CN4 OVER VOLTAGE PROTECTION OUT A5
CN3 INCOM TALK (X) A4
INCOM TALK (Y) B5
IC1 TL084CN AUDIO AMP
+9V
+4.5V
R1 750
R2 750
R3 2200
R4 2200
C1 2.2 35V
C2 2.2 35V
C3 2.2 35V
C4 2.2 35V
R5 6800
R6 300
R7 10K
R8 10K
R9 300
R45 100K
R10 10K
R11 10K
R12 10K
R13 10K
R14 4700
R15 22K
C5 10 16V
CN3 A3 INCOM TALK IN
CN3 B4 PGM JACK INCOM TALK IN
CN3 INCOM RECEIVE OUT(X) B8
CN3 INCOM IN/OUT (G) B7
CN3 A5 INCOM RECEIVE (X)
CN3 B6 INCOM RECEIVE (Y)
CN3 A7 INCOM JACK (G)
CN6 MIC OUT (Y) A6
MIC OUT (X) A7
MIC OUT (G) A1
IC2 LM387N AUDIO AMP
IC3 TL072CP AUDIO AMP
+12V
+6V
C23 470 10V
R20 100K
C10 10 16V
R21 330
C11 1/35V
R22 10K
R23 3900
C12 1/35V
R24 10K
R25 330
C13 10 16V
R26 2200
R27 2200
R28 22K
R29 22K
R30 10K
R31 10K
C14 10 16V
CN3 PGM RECEIVE OUT(X) A6
CN6 A4 MIC IN (X)
CN6 A5 MIC IN (Y)
B5 MIC IN (G)
C22 0.01
RED T1 BLU
500Ω
50KΩ
WHT
GOLD
C9 1/35V
R19 47K
CN6 A3 PGM IN (X)
A2 PGM IN (Y)
B1 PGM IN (G)
Q2 2SC2296
Q3 2SC403C
Q4 2SC403C
RETURN VIDEO HUM CANCELLER
IC4 TL607CP IRIS AUTO/MANU SWITCHER
CN4 RET VIDEO OUT (X) B3
RET VIDEO OUT (G) A3
CN3 IRIS CONT OUT A8
CN3 B1 +9V IN
L1 47µH
+9V
CN4 A1 RET VIDEO IN.CCU(G)
A2 RET VIDEO IN.VTR(G)
B1 RET VIDEO IN.CCU(X)
B2 RET VIDEO IN.VTR(X)
CN4
R48 1K
D2 1S1555
R36 22K
R32 75
R33 1800
C15 10P
R38 2200
R46 150K
C17 22 16V
R39 22K
R41 75
R40 6800
C16 22 10V
R34 22K
R35 22K
R37 2700
C18 10 16V
D4 1S1555
R47 51K
R42 10K
EN V+
S1
OPEN
S2
S
GND V-
VTR MODE SIGNAL/ EARPHONE SIGNAL SEPARATOR
T2
750Ω
8Ω
C20 4.7 16V
CN4 EARPHONE OUT (X) B4
CN4 EARPHONE OUT (G) A4
CN6 VTR MODE OUT B7
CN3 B2 GND
A1 -9V IN
-9V
L2 47µH
C19 10 16V
CN6 B4 MANUAL IRIS IN
B3 AUTO IRIS IN
B6 VTR MODE & EARPHON IN

AU-15
1-602-110-13
CCU-300
CCU-300P
CCU-300PM

NOTE: R48 ADD 1K
J : 15701 AND HIGHER
U/C : 11001 AND HIGHER
P(AEP) : 11501 AND HIGHER
PM(BRZ) : 10101 AND HIGHER

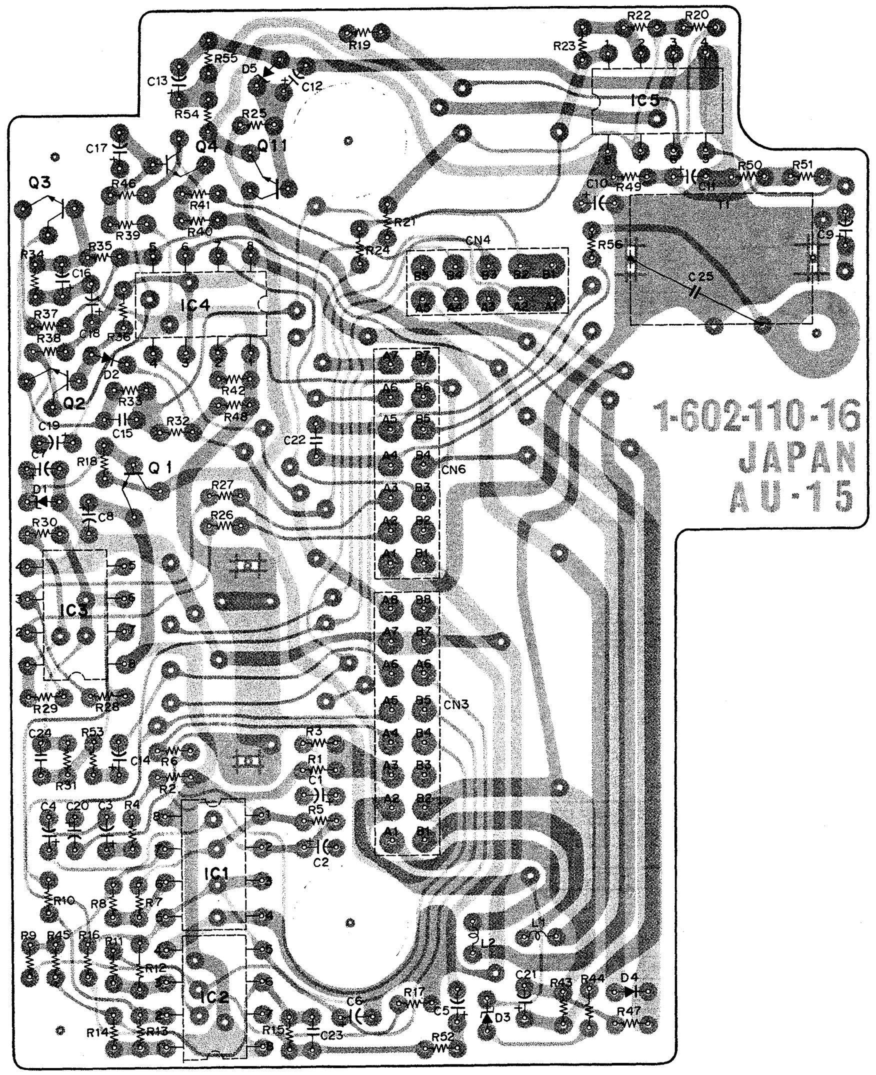
NOTE: C9 Change of circuit.
J : 15901 AND HIGHER
U/C : 11201 AND HIGHER
P(AEP) : 11901 AND HIGHER
PM(BRZ) : 10201 AND HIGHER

NOTE: C23 ADD 470/10V
J : 15901 AND HIGHER
U/C : 11301 AND HIGHER
P(AEP) : 11901 AND HIGHER
PM(BRZ) : 10201 AND HIGHER

The shaded and ⚠-marked components are critical to safety.
Replace only with same component as specified.

AU-15 BOARD (AUDIO SYSTEM)

J	:	Serial No. 18101 and higher
U/C	:	Serial No. 11901 and higher
AEP	:	Serial No. 12701 and higher
BRZ	:	Serial No. 10406 and higher



1-602-110-16
JAPAN
AU-15
IC1
IC2
IC3
IC4
IC5
CN3
CN4
CN6
Q1
Q2
Q3
Q4
Q11
D1
D2
D3
D4
D5
T1
L1
L2
C1
C2
C4
C5
C6
C8
C9
C10
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R12
R13
R14
R15
R16
R17
R18
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R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
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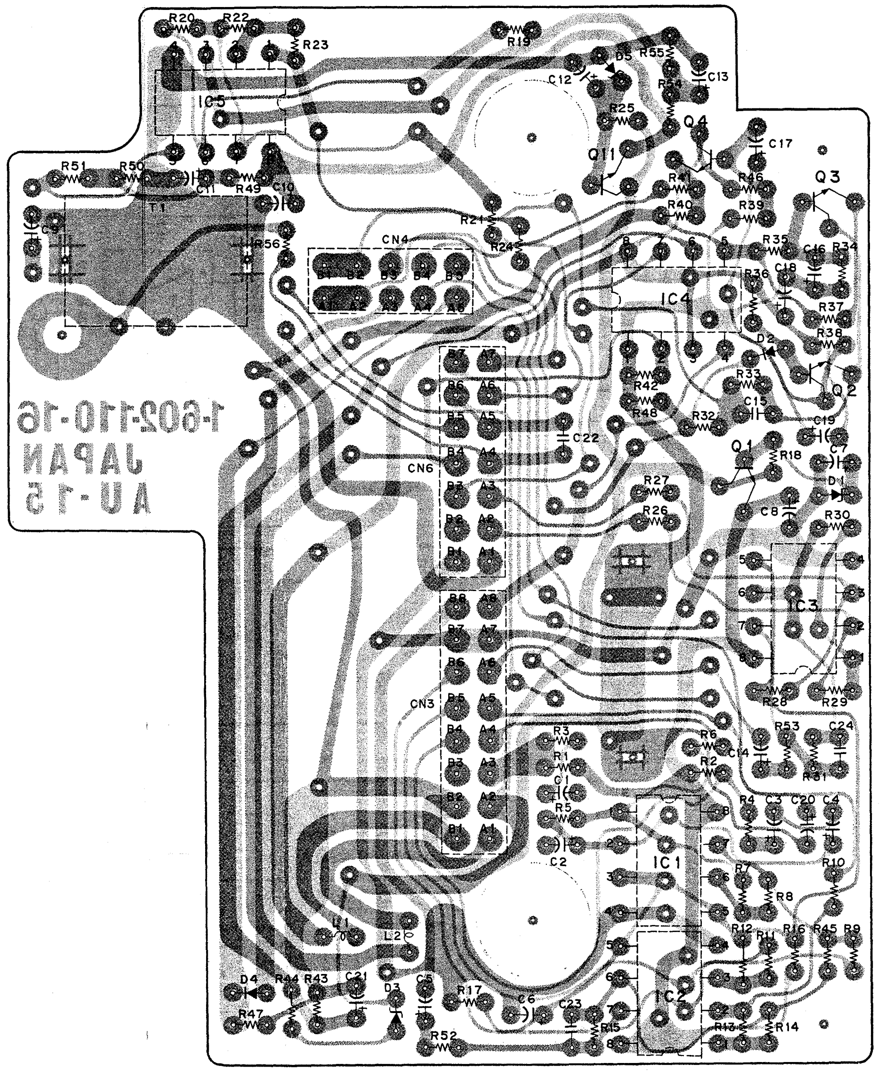
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56

AU-15 -SOLDERING SIDE-
1-602-110-15,16
CCU-300
CCU-300P
CCU-300PM



1-602-110-16
JAPAN
AU-15
IC1
IC2
IC3
IC4
IC5
CN3
CN4
CN6
Q1
Q2
Q3
Q4
Q11
D1
D2
D3
D4
D5
T1
L1
L2
C1
C2
C3
C5
C6
C7
C8
C9
C10
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
R1
R2
R3
R4
R5
R6
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R11
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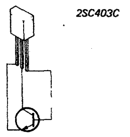
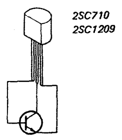
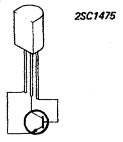
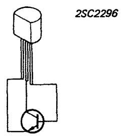
R52
R53
R55
R56

AU-15 -COMPONENT SIDE-
1-602-110-15,16
CCU-300
CCU-300P
CCU-300PM

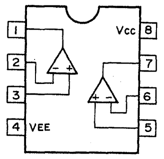



2SC710
2SC1209



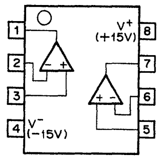


µPC4558C (NEC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



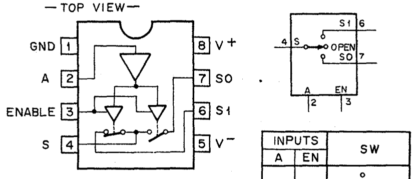
1
2
3
4
5
6
7
8
Vcc
VEE

NJM4560D (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



1
2
3
4
5
6
7
8
V+
(+15V)
V−
(−15V)

TL607CP (TI)
SN72607P(TI)
MOS ANALOG SWITCH
-TOP VIEW-



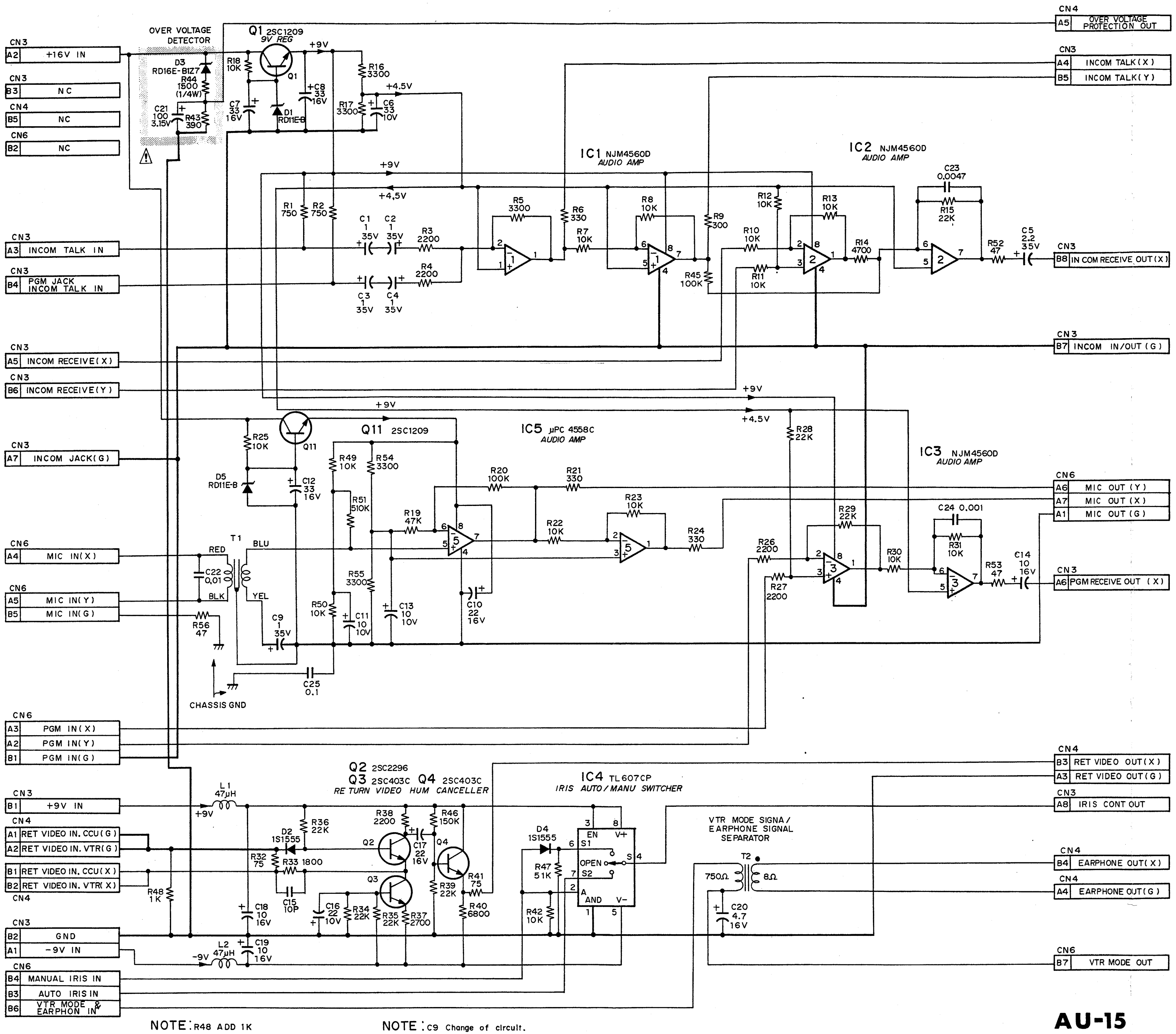
GND
A
ENABLE
S
1
2
3
4
5
6
7
8
V+
SO
S1
V−
S1
S
OPEN
SO
A
EN

INPUTS		SW
A	EN	
X	0	OPEN
0	1	6 7
1	1	6 7

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

AU-15 BOARD (AUDIO SYSTEM)

J : Serial No. 18101 and higher
U/C : Serial No. 11901 and higher
AEP : Serial No. 12701 and higher
BRZ : Serial No. 10406 and higher


CN3 A2 +16V IN
CN3 B3 NC
CN4 B5 NC
CN6 B2 NC
OVER VOLTAGE DETECTOR
D3 RD16E-B1Z7
R44 1500 (1/4W)
C21 100 3.15V
R43 390
Q1 2SC1209 9V REG
R18 10K
C7 33 16V
D1 RD11E-B
C8 33 16V
R16 3300
R17 3300
C6 33 10V
+9V
+4.5V
CN4 A5 OVER VOLTAGE PROTECTION OUT
CN3 A4 INCOM TALK (X)
CN3 B5 INCOM TALK (Y)
IC1 NJM4560D AUDIO AMP
IC2 NJM4560D AUDIO AMP
R1 750
R2 750
C1 1 35V
C2 1 35V
R3 2200
R4 2200
C3 1 35V
C4 1 35V
R5 3300
R6 330
R7 10K
R8 10K
R9 300
R10 10K
R11 10K
R12 10K
R13 10K
R14 4700
R45 100K
C23 0.0047
R15 22K
R52 47
C5 2.2 35V
CN3 A3 INCOM TALK IN
CN3 B4 PGM JACK INCOM TALK IN
CN3 B8 IN COM RECEIVE OUT (X)
CN3 B7 INCOM IN/OUT (G)
CN3 A5 INCOM RECEIVE (X)
CN3 B6 INCOM RECEIVE (Y)
CN3 A7 INCOM JACK (G)
Q11 2SC1209
R25 10K
D5 RD11E-B
C12 33 16V
IC5 μPC 4558C AUDIO AMP
R49 10K
R54 3300
R51 510K
R19 47K
R20 100K
R21 330
R22 10K
R23 10K
R24 330
R55 3300
R50 10K
C11 10 10V
C13 10 10V
C10 22 16V
IC3 NJM4560D AUDIO AMP
R28 22K
R29 22K
R26 2200
R27 2200
R30 10K
C24 0.001
R31 10K
R53 47
C14 10 16V
CN6 A6 MIC OUT (Y)
CN6 A7 MIC OUT (X)
CN6 A1 MIC OUT (G)
CN3 A6 PGM RECEIVE OUT (X)
CN6 A4 MIC IN (X)
CN6 A5 MIC IN (Y)
CN6 B5 MIC IN (G)
T1 RED BLU BLK YEL
C22 0.01
R56 47
C9 1 35V
C25 0.1
CHASSIS GND
CN6 A3 PGM IN (X)
CN6 A2 PGM IN (Y)
CN6 B1 PGM IN (G)
Q2 2SC2296
Q3 2SC403C Q4 2SC403C
RETURN VIDEO HUM CANCELLER
IC4 TL607CP IRIS AUTO/MANU SWITCHER
EN V+ S1 OPEN S2 AND V-
L1 47μH
+9V
CN3 B1 +9V IN
CN4 A1 RET VIDEO IN. CCU (G)
CN4 A2 RET VIDEO IN. VTR (G)
CN4 B1 RET VIDEO IN. CCU (X)
CN4 B2 RET VIDEO IN. VTR (X)
R48 1K
D2 1S1555
R36 22K
R32 75
R33 1800
C15 10P
C18 10 16V
R38 2200
R46 150K
C17 22 16V
R39 22K
R41 75
R40 6800
C16 22 10V
R34 22K
R35 22K
R37 2700
D4 1S1555
R47 51K
R42 10K
VTR MODE SIGNAL/ EARPHONE SIGNAL SEPARATOR
T2 750Ω 8Ω
C20 4.7 16V
CN4 B3 RET VIDEO OUT (X)
CN4 A3 RET VIDEO OUT (G)
CN3 A8 IRIS CONT OUT
CN4 B4 EARPHONE OUT (X)
CN4 A4 EARPHONE OUT (G)
CN6 B7 VTR MODE OUT
CN3 B2 GND
CN3 A1 -9V IN
L2 47μH
-9V
C19 10 16V
CN6 B4 MANUAL IRIS IN
CN6 B3 AUTO IRIS IN
CN6 B6 VTR MODE & EARPHON IN

NOTE : R48 ADD 1K
(J : 15701 AND HIGHER
U/C : 11001 AND HIGHER
P(AEP) : 11501 AND HIGHER
PM(BRZ) : 10101 AND HIGHER)

NOTE : C9 Change of circuit.
(J : 15901 AND HIGHER
U/C : 11201 AND HIGHER
P(AEP) : 11901 AND HIGHER
PM(BRZ) : 10201 AND HIGHER)

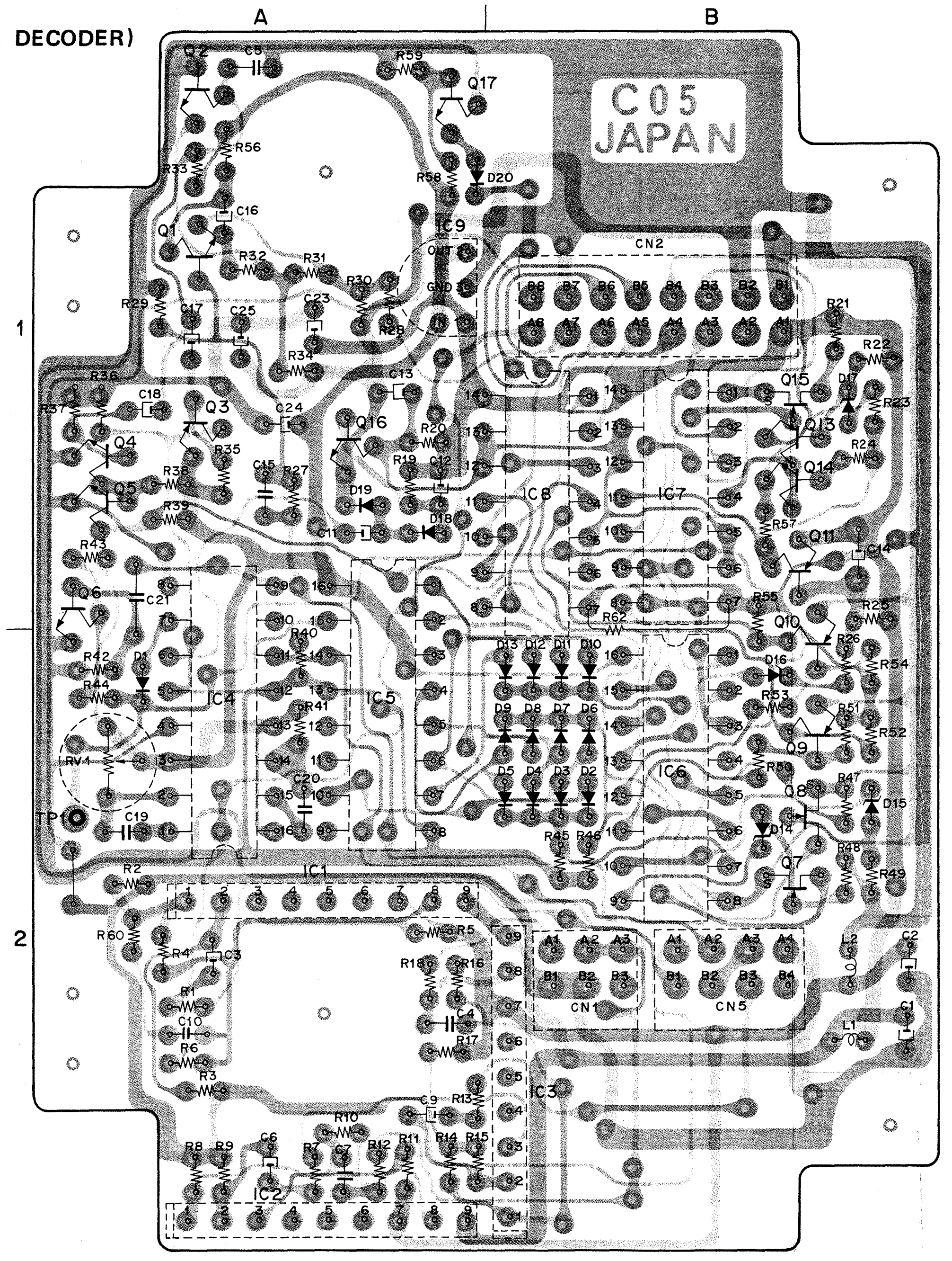
NOTE : C23 ADD 470/10V
(J : 15901 AND HIGHER
U/C : 11301 AND HIGHER
P(AEP) : 11901 AND HIGHER
PM(BRZ) : 10201 AND HIGHER)

AU-15
1-602-110-15,16
CCU-300
CCU-300P
CCU-300PM

The shaded and ⚠-marked components are critical to safety.
Replace only with same component as specified.

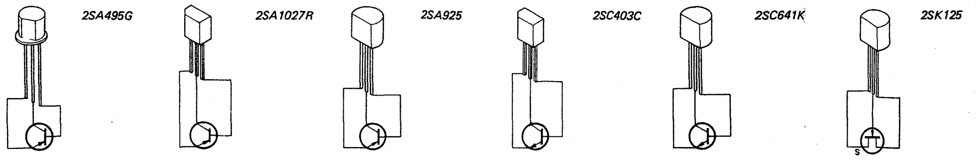
CO-5 BOARD (CAMERA CONTROL SIGNAL DECODER)

J	:	Serial No. Up to 18300
U/C	:	Serial No. Up to 12100
AEP	:	Serial No. Up to 13000
BRZ	:	Serial No. Up to 10405

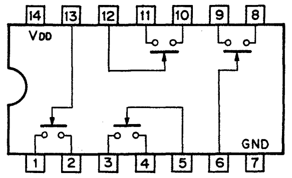

A
B
1
2
C05
JAPAN
CN1
CN2
CN5
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
RV1
TP1

CO-5 -SOLDERING SIDE-
1-602-109-14
CCU-300
CCU-300P
CCU-300PM

CN1	B-2
CN2	B-1
CN5	B-2
D1	A-2
D2	B-2
D3	B-2
D4	B-2
D5	B-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	B-2
D12	B-2
D13	B-2
D14	B-2
D15	B-2
D16	B-2
D17	B-1
D18	A-1
D19	A-1
D20	A-1
IC1	A-2
IC2	A-2
IC3	B-2
IC4	A-2
IC5	A-2
IC6	B-2
IC7	B-1
IC8	B-1
IC9	A-1
Q1	A-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	B-2
Q8	B-2
Q9	B-2
Q10	B-2
Q11	B-1
Q13	B-1
Q14	B-1
Q15	B-1
Q16	A-1
Q17	A-1
RV1	A-2
TP1	A-2

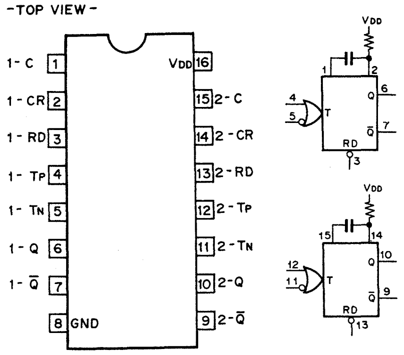

2SA495G
2SA1027R
2SA925
2SC403C
2SC641K
2SK125

CD4016AE/BE (RCA)
MC14016BCP (MOTOROLA)
TC4016BP (TOSHIBA)
C-MOS BILATERAL SWITCH
-TOP VIEW-

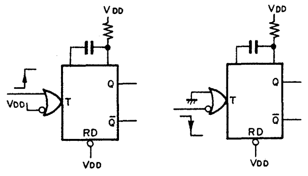

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

CONT IN	SW
0	OFF
1	ON

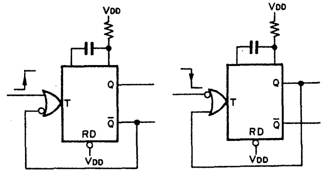
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-


1-C 1
1-CR 2
1-RD 3
1-TP 4
1-TN 5
1-Q 6
1-Q̄ 7
8 GND
VDD 16
15 2-C
14 2-CR
13 2-RD
12 2-TP
11 2-TN
10 2-Q
9 2-Q̄
VDD
T
Q
Q̄
RD

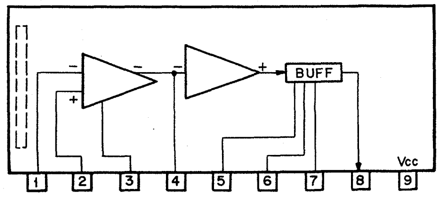
RETRIGGERABLE M.M.V



NON-RETRIGGERABLE M.M.V

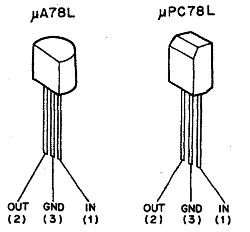


BX315 (SONY)
BX315A (SONY)
VIDEO OUTPUT AMPLIFIER (PHASE INVERTED)
— REAR VIEW —

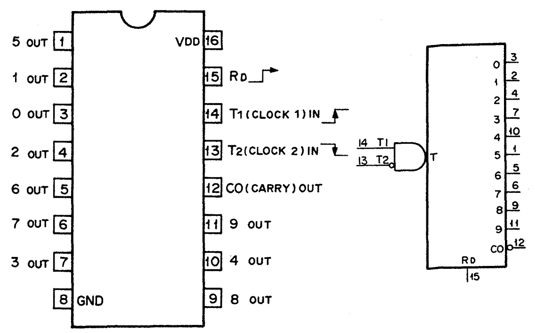

BUFF
Vcc
1
2
3
4
5
6
7
8
9

μA78L05AV (FSC)
μA78L05ACL (TI)
μPC78L05A (NEC)
3-TERMINAL POSITIVE REGULATOR

+5V : UP TO 100mA

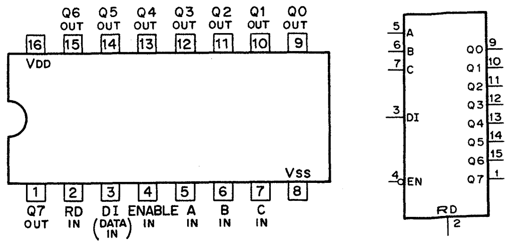

μA78L
μPC78L
OUT (2)
GND (3)
IN (1)
OUT (2)
GND (3)
IN (1)

CD4017AE/BE (RCA)
MC14017BCP (MOTOROLA)
TC4017BP (TOSHIBA)
μPD4017C (NEC)
C-MOS DECADE COUNTER/DIVIDER
— TOP VIEW —


5 OUT 1
1 OUT 2
0 OUT 3
2 OUT 4
6 OUT 5
7 OUT 6
3 OUT 7
8 GND
VDD 16
15 RD
14 T1 (CLOCK 1) IN
13 T2 (CLOCK 2) IN
12 CO (CARRY) OUT
11 9 OUT
10 4 OUT
9 8 OUT
T
RD
CO

COUNT	INPUTS		OUTPUTS										
	RD	$T=T1\cdot\overline{T2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	↑	0	0	0	0	0	0	0	0	0	1	1
1	0	↑	0	0	0	0	0	0	0	0	1	0	1
2	0	↑	0	0	0	0	0	0	0	1	0	0	1
3	0	↑	0	0	0	0	0	0	1	0	0	0	1
4	0	↑	0	0	0	0	0	1	0	0	0	0	1
5	0	↑	0	0	0	0	1	0	0	0	0	0	0
6	0	↑	0	0	0	1	0	0	0	0	0	0	0
7	0	↑	0	0	1	0	0	0	0	0	0	0	0
8	0	↑	0	1	0	0	0	0	0	0	0	0	0
9	0	↑	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

CD4099BE (RCA)
TC4099BP (TOSHIBA)
μPD4099C (NEC)
C-MOS 8-BIT ADDRESSABLE LATCH
— TOP VIEW —


Q6 OUT
Q5 OUT
Q4 OUT
Q3 OUT
Q2 OUT
Q1 OUT
Q0 OUT
16
15
14
13
12
11
10
9
VDD
Vss
1
2
3
4
5
6
7
8
Q7 OUT
RD IN
DI (DATA IN)
ENABLE IN
A IN
B IN
C IN
A
B
C
DI
EN
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
RD

MODE SELECTION

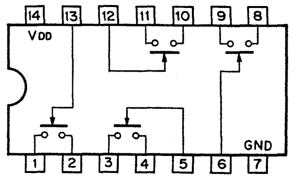
CONTROL INPUT		OUTPUT OF ADDRESSED LATCH	OUTPUT OF EACH OTHER LATCH
EN	RD		
0	0	D	Qno
0	1	D	0
1	0	Qno	Qno
1	1	0	0

Qno : HOLDS PREVIOUS DATA

LATCH SELECTION

CONTROL INPUT			ADDRESSED LATCH
C	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

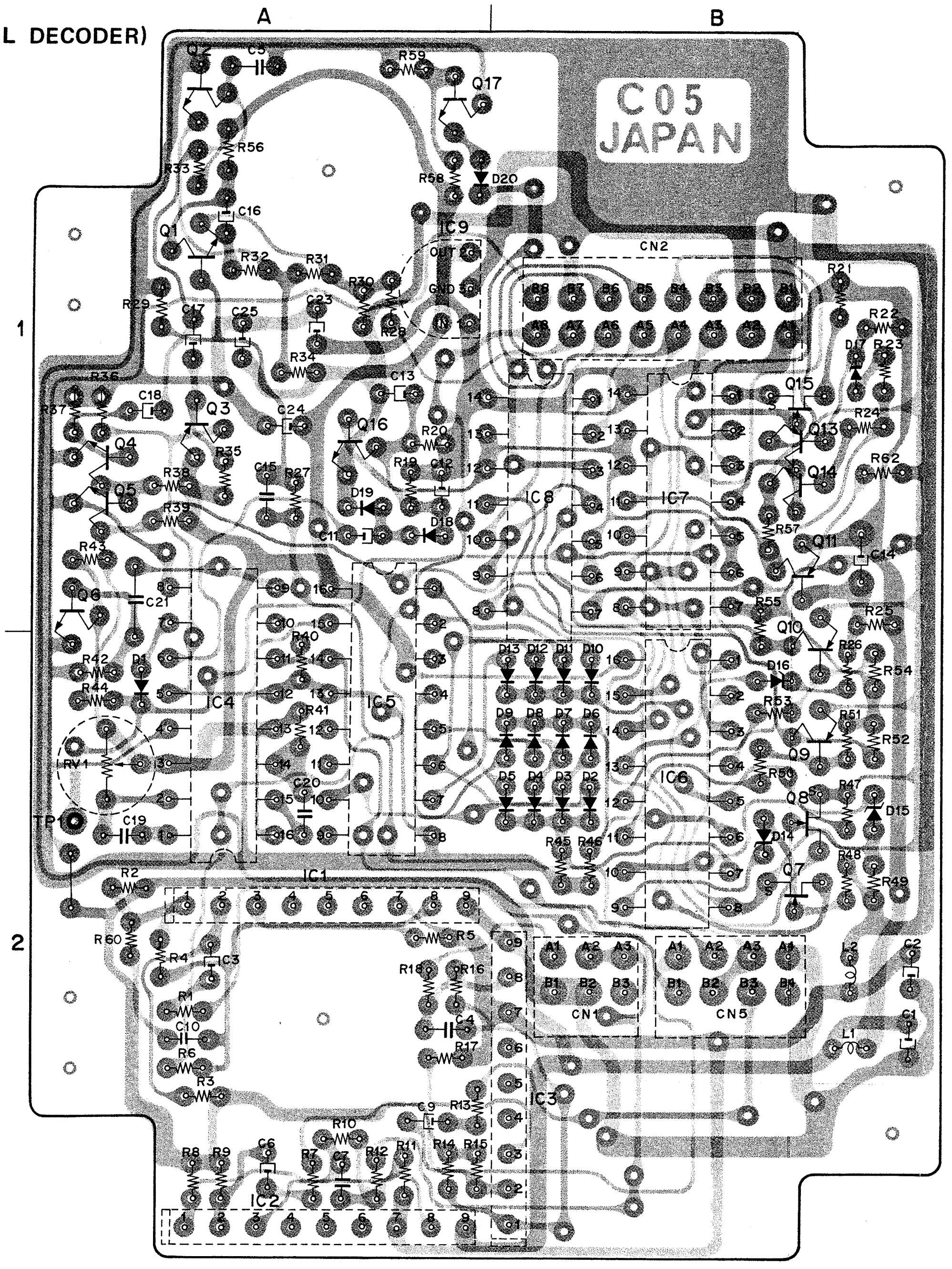
TC4066BP (TOSHIBA)
C-MOS BILATERAL SWITCH
-TOP VIEW-


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

CONT IN	SW
0	OFF
1	ON

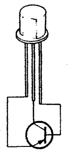
CO-5 BOARD (CAMERA CONTROL SIGNAL DECODER)

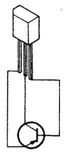
J	: Serial No. 18301 and higher
U/C	: Serial No. 12101 and higher
AEP	: Serial No. 12901 and higher
BRZ	: Serial No. 10406 and higher

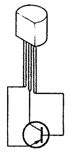

A
B
1
2
C05
JAPAN
CN1
CN2
CN5
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
RV1
TP1

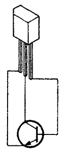
CN1	B-2
CN2	B-1
CN5	B-2
D1	A-2
D2	B-2
D3	B-2
D4	B-2
D5	B-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	B-2
D12	B-2
D13	B-2
D14	B-2
D15	B-2
D16	B-2
D17	B-1
D18	A-1
D19	A-1
D20	A-1
IC1	A-2
IC2	A-2
IC3	B-2
IC4	A-2
IC5	A-2
IC6	B-2
IC7	B-1
IC8	B-1
IC9	A-1
Q1	A-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	B-2
Q8	B-2
Q9	B-2
Q10	B-2
Q11	B-1
Q13	B-1
Q14	B-1
Q15	B-1
Q16	A-1
Q17	A-1
RV1	A-2
TP1	A-2

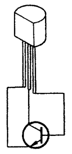
CO-5 -SOLDERING SIDE-
1-602-109-15
CCU-300
CCU-300P
CCU-300PM

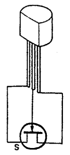

2SA495G


2SA1027R

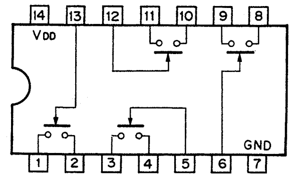

2SA925


2SC403C


2SC641K

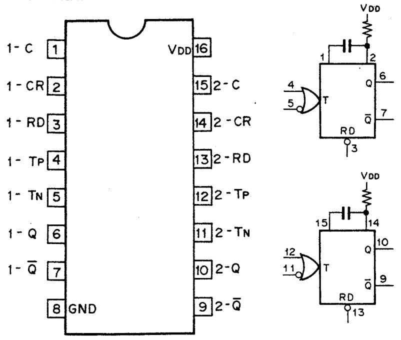

2SK125

CD4016AE/BE (RCA)
MC14016BCP (MOTOROLA)
TC4016BP (TOSHIBA)
C-MOS BILATERAL SWITCH
-TOP VIEW-

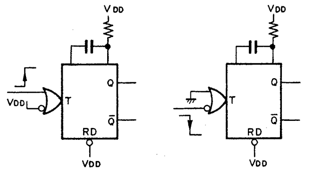

VDD
GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7

CONT IN	SW
0	OFF
1	ON

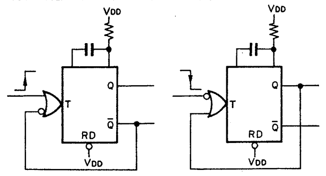
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-


1-C
1-CR
1-RD
1-TP
1-TN
1-Q
1-Q̄
GND
VDD
2-C
2-CR
2-RD
2-TP
2-TN
2-Q
2-Q̄
RD
VDD

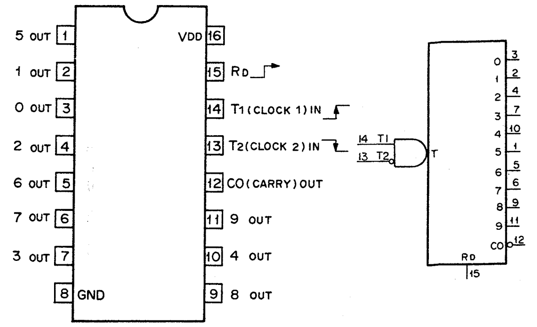
RETRIGGERABLE M.M.V



NON-RETRIGGERABLE M.M.V

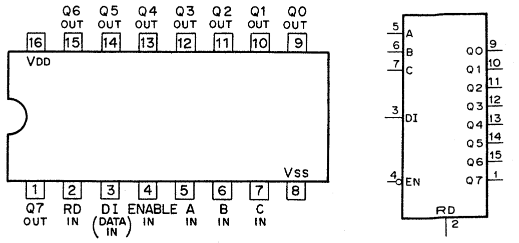


CD4017AE/BE (RCA)
MC14017BCP (MOTOROLA)
TC4017BP (TOSHIBA)
µPD4017C (NEC)
C-MOS DECADE COUNTER/DIVIDER
—TOP VIEW—


5 OUT
1 OUT
0 OUT
2 OUT
6 OUT
7 OUT
3 OUT
GND
VDD
RD
T1 (CLOCK 1) IN
T2 (CLOCK 2) IN
CO (CARRY) OUT
9 OUT
4 OUT
8 OUT
T
RD
CO

COUNT	INPUTS		OUTPUTS										
	RD	T=T1·$\overline{T2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	_↑‾	0	0	0	0	0	0	0	0	0	1	1
1	0	_↑‾	0	0	0	0	0	0	0	0	1	0	1
2	0	_↑‾	0	0	0	0	0	0	0	1	0	0	1
3	0	_↑‾	0	0	0	0	0	0	1	0	0	0	1
4	0	_↑‾	0	0	0	0	0	1	0	0	0	0	1
5	0	_↑‾	0	0	0	0	1	0	0	0	0	0	0
6	0	_↑‾	0	0	0	1	0	0	0	0	0	0	0
7	0	_↑‾	0	0	1	0	0	0	0	0	0	0	0
8	0	_↑‾	0	1	0	0	0	0	0	0	0	0	0
9	0	_↑‾	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

CD4099BE (RCA)
TC4099BP (TOSHIBA)
µPD4099C (NEC)
C-MOS 8-BIT ADDRESSABLE LATCH
—TOP VIEW—


Q6 OUT
Q5 OUT
Q4 OUT
Q3 OUT
Q2 OUT
Q1 OUT
Q0 OUT
VDD
Vss
Q7 OUT
RD IN
DI (DATA IN) IN
ENABLE IN
A IN
B IN
C IN
A
B
C
DI
EN
RD
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7

MODE SELECTION

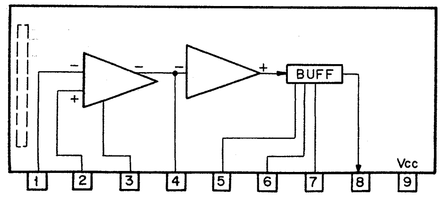
CONTROL INPUT		OUTPUT OF ADDRESSED LATCH	OUTPUT OF EACH OTHER LATCH
EN	RD		
0	0	D	Qno
0	1	D	0
1	0	Qno	Qno
1	1	0	0

Qno : HOLDS PREVIOUS DATA

LATCH SELECTION

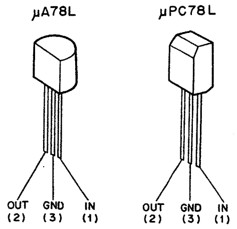
CONTROL INPUT			ADDRESSED LATCH
C	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

BX315 (SONY)
BX315A (SONY)
VIDEO OUTPUT AMPLIFIER (PHASE INVERTED)
— REAR VIEW —

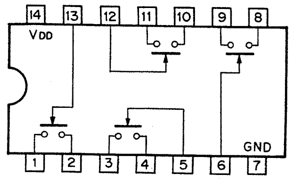

BUFF
Vcc
1
2
3
4
5
6
7
8
9

µA78L05AV (FSC)
µA78L05ACL (TI)
µPC78L05A (NEC)
3-TERMINAL POSITIVE REGULATOR

+5V : UP TO 100mA

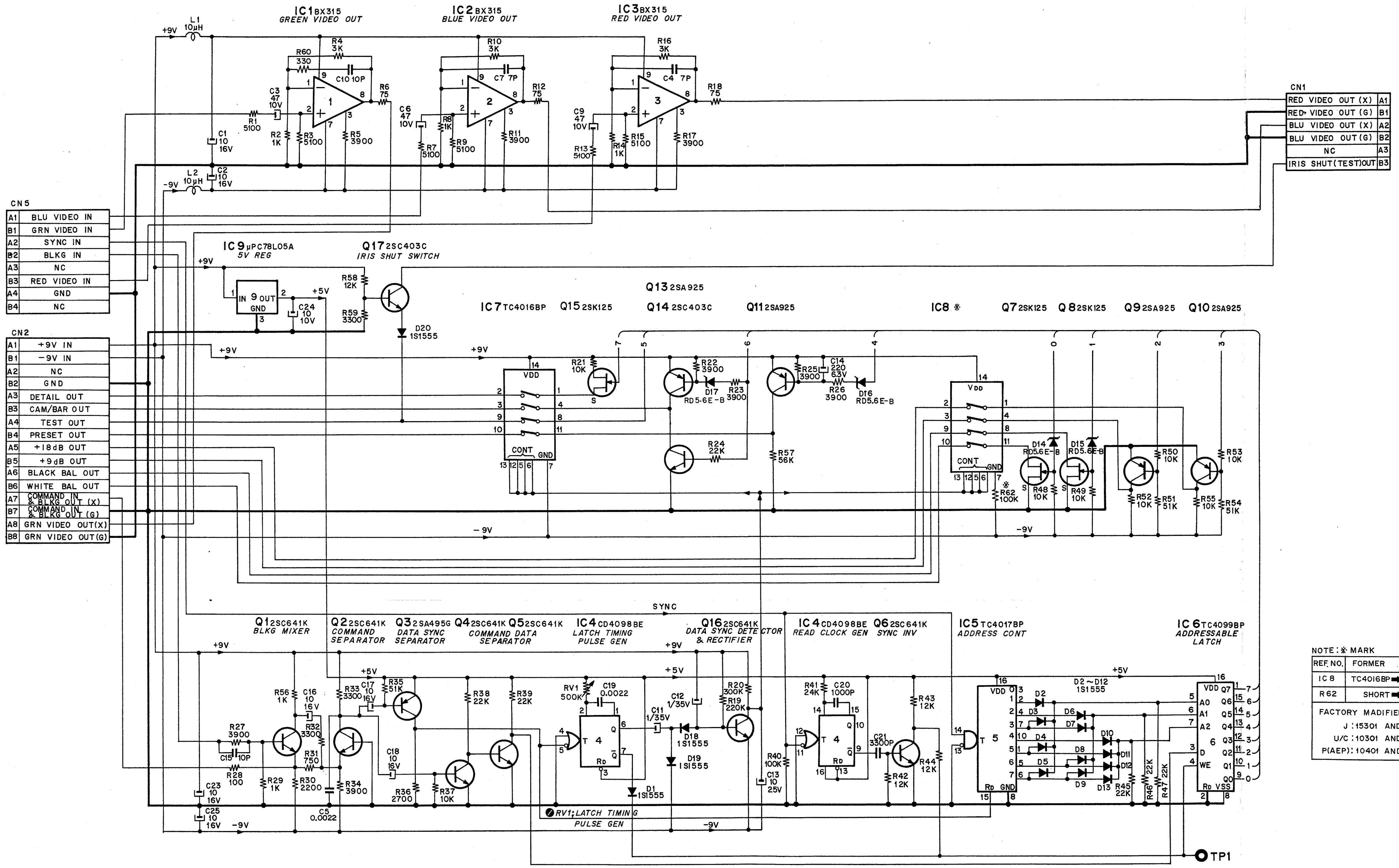

µA78L
µPC78L
OUT (2)
GND (3)
IN (1)
OUT (2)
GND (3)
IN (1)

TC4066BP (TOSHIBA)
C-MOS BILATERAL SWITCH
-TOP VIEW-


VDD
GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7

CONT IN	SW
0	OFF
1	ON

CO-5 BOARD (CAMERA CONTROL SIGNAL DECODER)


IC1 BX315 GREEN VIDEO OUT
IC2 BX315 BLUE VIDEO OUT
IC3 BX315 RED VIDEO OUT
L1 10μH
L2 10μH
+9V
-9V
CN5
A1 BLU VIDEO IN
B1 GRN VIDEO IN
A2 SYNC IN
B2 BLKG IN
A3 NC
B3 RED VIDEO IN
A4 GND
B4 NC
CN2
A1 +9V IN
B1 -9V IN
A2 NC
B2 GND
A3 DETAIL OUT
B3 CAM/BAR OUT
A4 TEST OUT
B4 PRESET OUT
A5 +18dB OUT
B5 +9dB OUT
A6 BLACK BAL OUT
B6 WHITE BAL OUT
A7 COMMAND IN & BLKG OUT (X)
B7 COMMAND IN & BLKG OUT (G)
A8 GRN VIDEO OUT(X)
B8 GRN VIDEO OUT(G)
CN1
RED VIDEO OUT (X) A1
RED VIDEO OUT (G) B1
BLU VIDEO OUT (X) A2
BLU VIDEO OUT (G) B2
NC A3
IRIS SHUT(TEST)OUT B3
IC9 μPC78L05A 5V REG
Q17 2SC403C IRIS SHUT SWITCH
D20 1S1555
IC7 TC4016BP
Q15 2SK125
Q13 2SA925
Q14 2SC403C
Q11 2SA925
IC8 ※
Q7 2SK125
Q8 2SK125
Q9 2SA925
Q10 2SA925
D17 RD5.6E-B
D16 RD5.6E-B
D14 RD5.6E-B
D15 RD5.6E-B
SYNC
Q1 2SC641K BLKG MIXER
Q2 2SC641K COMMAND SEPARATOR
Q3 2SA495G DATA SYNC SEPARATOR
Q4 2SC641K Q5 2SC641K COMMAND DATA SEPARATOR
IC4 CD4098BE LATCH TIMING PULSE GEN
Q16 2SC641K DATA SYNC DETECTOR & RECTIFIER
IC4 CD4098BE READ CLOCK GEN
Q6 2SC641K SYNC INV
IC5 TC4017BP ADDRESS CONT
IC6 TC4099BP ADDRESSABLE LATCH
D2~D12 1S1555
RV1 500K
RV1; LATCH TIMING PULSE GEN
D1 1S1555
D18 1S1555
D19 1S1555
TP1

NOTE : ※ MARK

REF. NO.	FORMER	NEW
IC 8	TC4016BP	TC4066BP
R 62	SHORT	ADD 100K

FACTORY MADIFIED SERIAL NO.
J : 15301 AND HIGHER
U/C : 10301 AND HIGHER
P(AEP) : 10401 AND HIGHER

CCU ADAPTOR FRAME WIRING
RC-13 BOARD

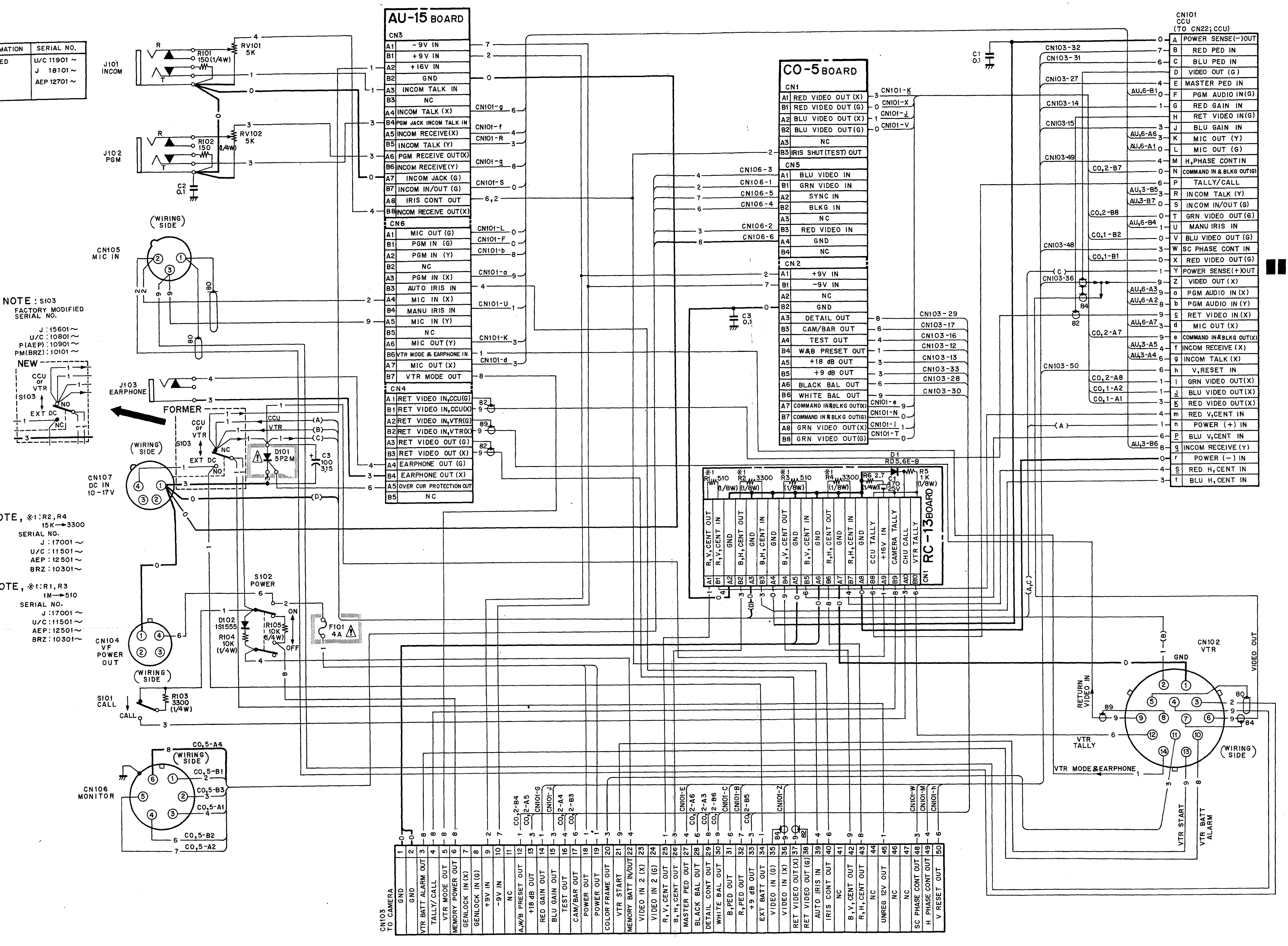
NOTE

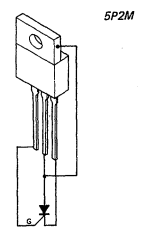
MARK	CHANGE INFORMATION	SERIAL NO.
※	C3 0.1 ADDED	U/C 11901 ~ J 18101 ~ AEP 12701 ~

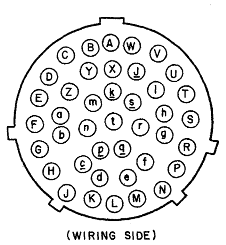
NOTE : S103
FACTORY MODIFIED
SERIAL NO.
J : 15601 ~
U/C : 10801 ~
P(AEP) : 10901 ~
PM(BRZ) : 10101 ~

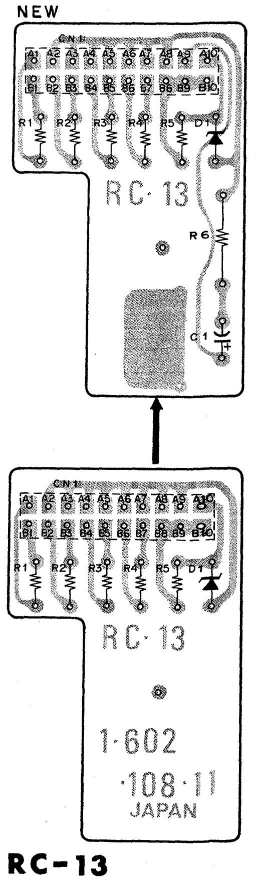
NOTE, ※1 : R2, R4
15K → 3300
SERIAL NO.
J : 17001 ~
U/C : 11501 ~
AEP : 12501 ~
BRZ : 10301 ~

NOTE, ※1 : R1, R3
1M → 510
SERIAL NO.
J : 17001 ~
U/C : 11501 ~
AEP : 12501 ~
BRZ : 10301 ~


J101 INCOM
J102 PGM
J103 EARPHONE
RV101 5K
RV102 5K
R101 150 (1/4W)
R102 150 (1/4W)
C2 0.1
(WIRING SIDE)
CN105 MIC IN
NEW
CCU or VTR
S103
EXT DC
NO
NC
FORMER
CN107 DC IN 10-17V
D101 5P2M
C3 100 3.15
CN104 VF POWER OUT
S101 CALL
R103 3300 (1/4W)
S102 POWER
ON
OFF
D102 1S1555
R104 10K (1/4W)
IR105 10K (1/4W)
F101 4A
CN106 MONITOR
CO,5-A4
CO,5-B1
CO,5-B3
CO,5-A1
CO,5-B2
CO,5-A2
AU-15 BOARD
CN3
A1 -9V IN
B1 +9V IN
A2 +16V IN
B2 GND
A3 INCOM TALK IN
B3 NC
A4 INCOM TALK (X)
B4 PGM JACK INCOM TALK IN
A5 INCOM RECEIVE(X)
B5 INCOM TALK (Y)
A6 PGM RECEIVE OUT(X)
B6 INCOM RECEIVE(Y)
A7 INCOM JACK (G)
B7 INCOM IN/OUT (G)
A8 IRIS CONT OUT
B8 INCOM RECEIVE OUT(X)
CN6
A1 MIC OUT (G)
B1 PGM IN (G)
A2 PGM IN (Y)
B2 NC
A3 PGM IN (X)
B3 AUTO IRIS IN
A4 MIC IN (X)
B4 MANU IRIS IN
A5 MIC IN (Y)
B5 NC
A6 MIC OUT (Y)
B6 VTR MODE & EARPHONE IN
A7 MIC OUT (X)
B7 VTR MODE OUT
CN4
A1 RET VIDEO IN,CCU(G)
B1 RET VIDEO IN,CCU(X)
A2 RET VIDEO IN,VTR(G)
B2 RET VIDEO IN,VTR(X)
A3 RET VIDEO OUT (G)
B3 RET VIDEO OUT (X)
A4 EARPHONE OUT (G)
B4 EARPHONE OUT (X)
A5 OVER CUR PROTECTION OUT
B5 NC
CN101-g
CN101-f
CN101-R
CN101-q
CN101-S
CN101-L
CN101-F
CN101-b
CN101-a
CN101-U
CN101-K
CN101-d
CO-5 BOARD
CN1
A1 RED VIDEO OUT (X)
B1 RED VIDEO OUT (G)
A2 BLU VIDEO OUT (X)
B2 BLU VIDEO OUT (G)
A3 NC
B3 IRIS SHUT (TEST) OUT
CN5
A1 BLU VIDEO IN
B1 GRN VIDEO IN
A2 SYNC IN
B2 BLKG IN
A3 NC
B3 RED VIDEO IN
A4 GND
B4 NC
CN2
A1 +9V IN
B1 -9V IN
A2 NC
B2 GND
A3 DETAIL OUT
B3 CAM/BAR OUT
A4 TEST OUT
B4 W&B PRESET OUT
A5 +18 dB OUT
B5 +9 dB OUT
A6 BLACK BAL OUT
B6 WHITE BAL OUT
A7 COMMAND IN & BLKG OUT(X)
B7 COMMAND IN & BLKG OUT(G)
A8 GRN VIDEO OUT(X)
B8 GRN VIDEO OUT(G)
CN106-3
CN106-1
CN106-5
CN106-4
CN106-2
CN106-6
CN101-K
CN101-X
CN101-J
CN101-V
CN101-e
CN101-N
CN101-I
CN101-T
CN103-29
CN103-17
CN103-16
CN103-12
CN103-13
CN103-33
CN103-28
CN103-30
C3 0.1
C1 0.1
D1 RD5.6E-B
※1 R1 510 (1/8W)
※1 R2 3300 (1/8W)
※1 R3 510 (1/8W)
※1 R4 3300 (1/8W)
R6 2.7 (1/4W)
C1 470 25V
R5 1K (1/8W)
RC-13 BOARD
CN1
A1 R,V,CENT OUT
B1 R,V,CENT IN
A2 GND
B2 B,H,CENT OUT
A3 GND
B3 B,H,CENT IN
A4 GND
B4 B,V,CENT OUT
A5 GND
B5 B,V,CENT IN
A6 GND
B6 R,H,CENT OUT
A7 GND
B7 R,H,CENT IN
A8 GND
B8 CCU TALLY
A9 +16V IN
B9 CAMERA TALLY
A10 CHU CALL
B10 VTR TALLY
CN101 CCU (TO CN22; CCU)
A POWER SENSE(-)OUT
B RED PED IN
C BLU PED IN
D VIDEO OUT (G)
E MASTER PED IN
F PGM AUDIO IN(G)
G RED GAIN IN
H RET VIDEO IN(G)
J BLU GAIN IN
K MIC OUT (Y)
L MIC OUT (G)
M H,PHASE CONT IN
N COMMAND IN & BLKG OUT(G)
P TALLY/CALL
R INCOM TALK (Y)
S INCOM IN/OUT (G)
T GRN VIDEO OUT (G)
U MANU IRIS IN
V BLU VIDEO OUT (G)
W SC PHASE CONT IN
X RED VIDEO OUT (G)
Y POWER SENSE(+)OUT
Z VIDEO OUT (X)
a PGM AUDIO IN (X)
b PGM AUDIO IN (Y)
c RET VIDEO IN (X)
d MIC OUT (X)
e COMMAND IN & BLKG OUT(X)
f INCOM RECEIVE (X)
g INCOM TALK (X)
h V,RESET IN
i GRN VIDEO OUT(X)
j BLU VIDEO OUT(X)
k RED VIDEO OUT(X)
m RED V,CENT IN
n POWER (+) IN
p BLU V,CENT IN
q INCOM RECEIVE (Y)
r POWER (-) IN
s RED H,CENT IN
t BLU H,CENT IN
AU,6-B1
AU,6-A6
AU,6-A1
AU,3-B5
AU,3-B7
AU,6-B4
AU,6-A3
AU,6-A2
AU,6-A7
AU,3-A5
AU,3-A4
AU,3-B6
CO,2-B7
CO,2-B8
CO,1-B2
CO,1-B1
CO,2-A7
CO,2-A8
CO,1-A2
CO,1-A1
CN103-32
CN103-31
CN103-27
CN103-14
CN103-15
CN103-49
CN103-48
CN103-36
CN103-50
CN102 VTR
GND
RETURN VIDEO IN
VIDEO OUT
VTR TALLY
VTR MODE & EARPHONE
VTR START
VTR BATT ALARM
(WIRING SIDE)
CN103 TO CAMERA
1 GND
2 GND
3 VTR BATT ALARM OUT
4 TALLY/CALL
5 VTR MODE OUT
6 MEMORY POWER OUT
7 GENLOCK IN (X)
8 GENLOCK IN (G)
9 +9V IN
10 -9V IN
11 NC
12 A,W/B PRESET OUT
13 +18 dB OUT
14 RED GAIN OUT
15 BLU GAIN OUT
16 TEST OUT
17 CAM/BAR OUT
18 POWER OUT
19 POWER OUT
20 COLOR FRAME OUT
21 VTR START
22 MEMORY BATT IN/OUT
23 VIDEO IN 2 (X)
24 VIDEO IN 2 (G)
25 R,V,CENT OUT
26 B,H,CENT OUT
27 MASTER PED OUT
28 BLACK BAL OUT
29 DETAIL CONT OUT
30 WHITE BAL OUT
31 B,PED OUT
32 R,PED OUT
33 +9 dB OUT
34 EXT BATT OUT
35 VIDEO IN (G)
36 VIDEO IN (X)
37 RET VIDEO OUT(X)
38 RET VIDEO OUT (G)
39 AUTO IRIS IN
40 IRIS CONT OUT
41 NC
42 B,V,CENT OUT
43 R,H,CENT OUT
44 NC
45 UNREG 12V OUT
46 NC
47 NC
48 SC PHASE CONT OUT
49 H PHASE CONT OUT
50 V RESET OUT
CO,2-B4
CO,2-A5
CN101-G
CN101-J
CO,2-A4
CO,2-B3
CN101-E
CO,2-A6
CO,2-A3
CO,2-B6
CN101-C
CN101-B
CO,2-B5
CN101-Z
CN101-W
CN101-M
CN101-h



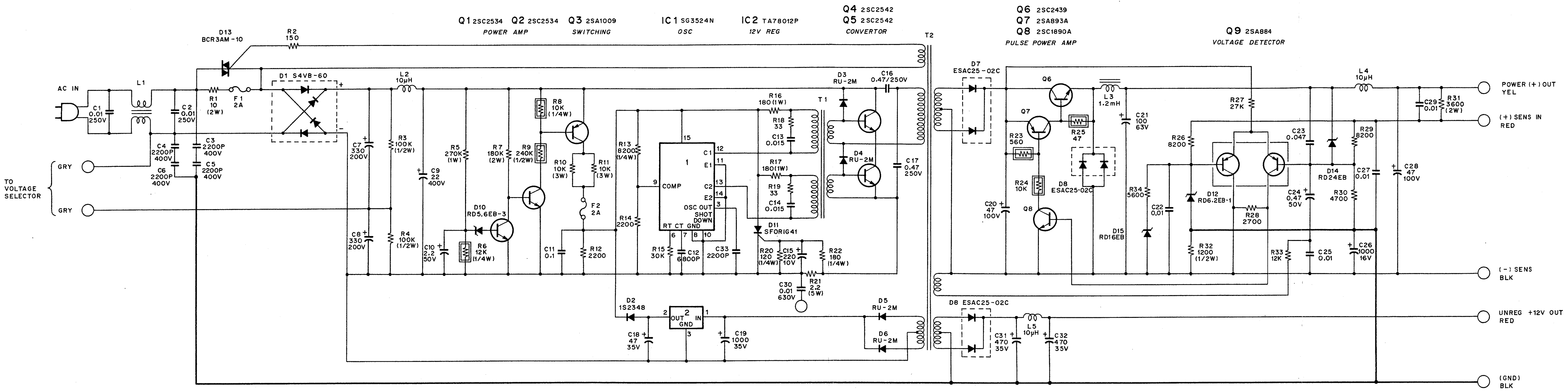

(WIRING SIDE)


NEW
CN1
R1
R2
R3
R4
R5
R6
D1
C1
RC-13
1-602
108-11
JAPAN

RC-13
- SOLDERING SIDE -

The shaded and ⚠-marked components are critical to safety.
Replace only with same component as specified.

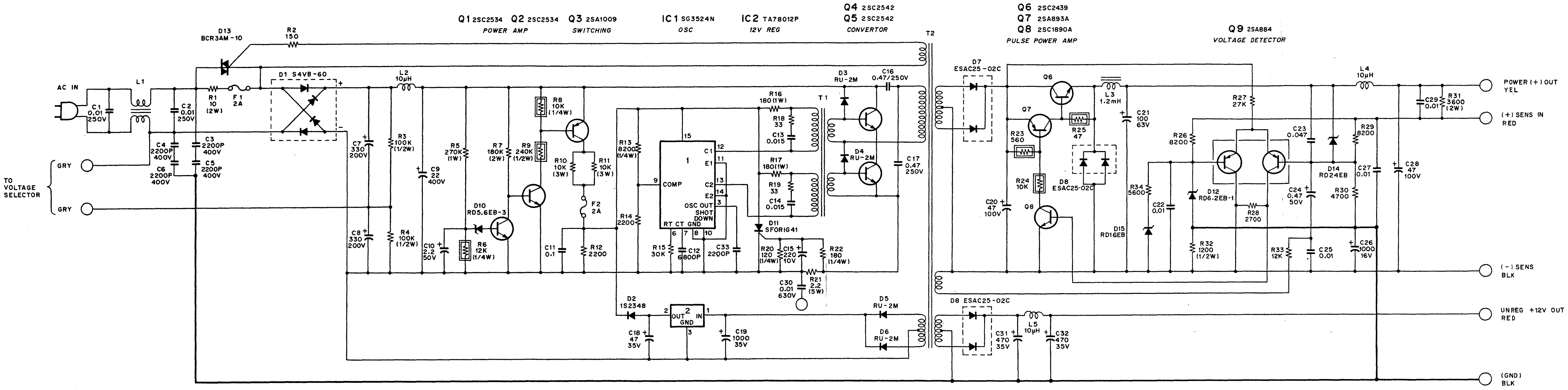
SWITCHING REGULATOR


Q1 2SC2534 Q2 2SC2534 POWER AMP
Q3 2SA1009 SWITCHING
IC1 SG3524N OSC
IC2 TA78012P 12V REG
Q4 2SC2542
Q5 2SC2542
CONVERTOR
Q6 2SC2439
Q7 2SA893A
Q8 2SC1890A
PULSE POWER AMP
Q9 2SA884
VOLTAGE DETECTOR
AC IN
C1 0.01 250V
L1
C2 0.01 250V
R1 10 (2W)
F1 2A
D13 BCR3AM-10
R2 150
D1 S4VB-60
C4 2200P 400V
C6 2200P 400V
C3 2200P 400V
C5 2200P 400V
GRY
GRY
TO VOLTAGE SELECTOR
C7 330 200V
C8 330 200V
L2 10μH
R3 100K (1/2W)
R4 100K (1/2W)
C9 22 400V
C10 2.2 50V
R5 270K (1W)
R6 12K (1/4W)
D10 RD5.6EB-3
R7 180K (2W)
R8 10K (1/4W)
R9 240K (1/2W)
R10 10K (3W)
R11 10K (3W)
F2 2A
C11 0.1
R12 2200
R13 8200 (1/4W)
R14 2200
COMP
C1 E1 C2 E2
OSC OUT
SHOT DOWN
RT CT GND
R15 30K
C12 6800P
C33 2200P
R16 180 (1W)
R18 33
C13 0.015
R17 180 (1W)
R19 33
C14 0.015
D11 SFORIG41
R20 120 (1/4W)
C15 220 10V
R22 180 (1/4W)
R21 2.2 (5W)
C30 0.01 630V
T1
D3 RU-2M
D4 RU-2M
C16 0.47/250V
C17 0.47 250V
T2
D2 1S2348
C18 47 35V
C19 1000 35V
D5 RU-2M
D6 RU-2M
D7 ESAC25-02C
D8 ESAC25-02C
R23 560
R24 10K
R25 47
D8 ESAC25-02C
C20 47 100V
L3 1.2mH
C21 100 63V
D15 RD16EB
R34 5600
C22 0.01
R26 8200
R27 27K
D12 RD6.2EB-1
R28 2700
R32 1200 (1/2W)
R33 12K
C23 0.047
C24 0.47 50V
C25 0.01
D14 RD24EB
R29 8200
R30 4700
C27 0.01
C26 1000 16V
C28 47 100V
L4 10μH
C29 0.01
R31 3600 (2W)
C31 470 35V
L5 10μH
C32 470 35V
POWER (+) OUT YEL
(+) SENS IN RED
(-) SENS BLK
UNREG +12V OUT RED
(GND) BLK

CCU-300 SWITCHING REGULATOR

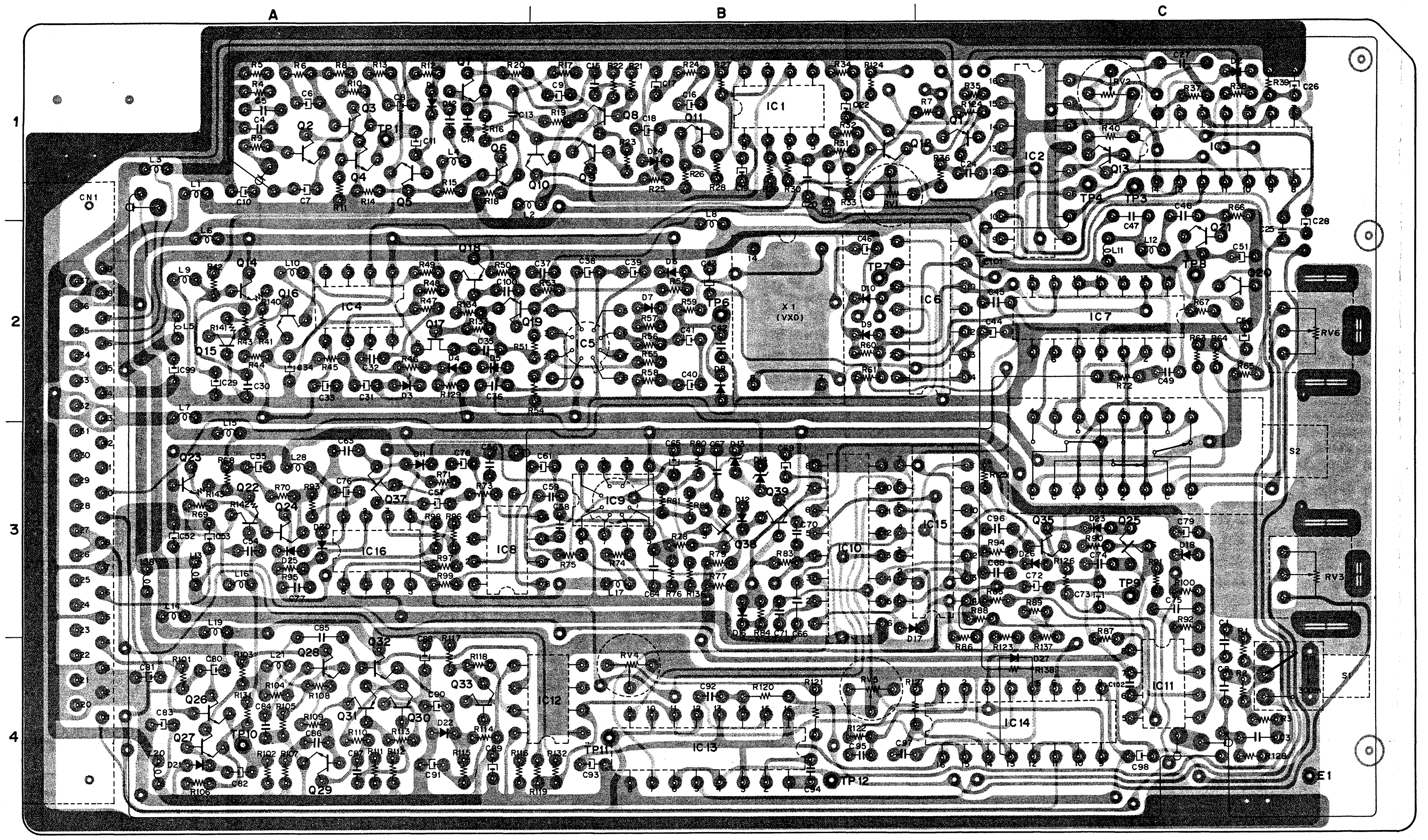
Ref. No.	Parts No.	Description
C1		POLYETHYLENE 0.01 250V
C2		POLYETHYLENE 0.01 250V
C3	1-161-737-00	CERAMIC 1000PF 20% 400V
C4	1-161-737-00	CERAMIC 1000PF 20% 400V
C5	1-161-737-00	CERAMIC 1000PF 20% 400V
C6	1-161-737-00	CERAMIC 1000PF 20% 400V
C7	1-127-461-00	ELECT 330 20% 200V
C8	1-127-461-00	ELECT 330 20% 200V
C9		ELECT 22 400V
C10		ELECT 2.2 50V
C11	1-130-632-00	METALIZED FILM 0.1 10% 50V
C12		0.0068
C13		15000PF
C14		15000PF
C15		ELECT 220 10V
C16	1-130-356-00	POLYESTER FILM 0.047 10% 250V
C17	1-130-356-00	POLYESTER FILM 0.047 10% 250V
C18		ELECT 47 35V
C19		ELECT 1000 35V
C20		ELECT 47 100V
C21		ELECT 100 63V
C22		0.01
C23		0.047
C24		0.47 50V
C25		0.01
C26		ELECT 1000 16V
C27		0.01
C28		ELECT 47 100V
C29		0.01
C30	1-130-141-00	POLYESTER FILM 0.01 630V
C31		ELECT 470 35V
C32		ELECT 470 35V
C33		0.0022 50V
D1	8-719-504-60	S4VB60
D2	8-719-932-48	1S2348H
D3	1-806-107-11	RU-2M
D4	1-806-107-11	RU-2M
D5	1-806-107-11	RU-2M
D6	1-806-107-11	RU-2M
D7	8-719-912-52	ESAC25-02C
D8	8-719-912-52	ESAC25-02C
D9	8-719-912-52	ESAC25-02C
D10	8-719-100-36	RD5.6E-B3
D11	1-806-236-11	SFOR1G41S
D12	8-719-100-37	RD6.2E-B1
D13	1-806-104-11	BCR3AM
D14	8-719-124-07	RD24E
D15	8-719-116-07	RD16E-B
F1	1-532-556-00	FUSE, TEMPERATURE M-147-2A
F2	1-532-556-00	FUSE, TEMPERATURE M-147-2A
IC1	8-759-935-24	SG3524N
IC2	8-759-280-12	TA78012AP
L1	1-421-328-11	COIL, CHOKE (FOR J, U/C)
	1-421-434-00	COIL, CHOKE (FOR AEP)
L2	1-421-329-00	10μH COIL, CHOKE
L3		1.2mH
L4	1-421-329-00	10μH COIL, CHOKE
L5	1-421-329-00	10μH COIL, CHOKE
Q1	1-806-095-11	2SC2534
Q2	1-806-095-11	2SC2534
Q3	1-806-094-11	2SA1009
Q4, 5	X-4869-209-0	2SC2542
Q6	1-806-124-11	2SC2438
Q7	8-729-612-77	2SA1027R
Q8	8-729-309-08	2SC1890A
Q9	8-765-020-00	2SA884
R1	1-208-260-00	CERAMIC 10 2W 10%
R2	1-247-111-00	CARBON 150 1/4W 5%
R3	1-247-288-00	CARBON 100K 1/2W 5%
R4	1-247-288-00	CARBON 100K 1/2W 5%
R5		270K 1W 5%
R6	1-247-157-00	CARBON 12K 1/4W 5%
R7	1-208-263-00	CERAMIC 180K 2W 10%
R8	1-247-155-00	CARBON 10K 1/4W 5%
R9		240K 1/2W
R10		CERAMIC 10K 3W 10%
R11		CERAMIC 10K 3W 10%
R12	1-247-139-00	CARBON 2.2K 1/4W 5%
R13	1-247-153-00	CARBON 8.2K 1/4W 5%
R14	1-247-139-00	CARBON 2.2K 1/4W 5%
R15	1-247-142-00	CARBON 30K 1/4W 5%
R16		180 1W 5%
R17		180 1W 5%
R18	1-247-095-00	CARBON 33 1/4W 5%
R19	1-247-095-00	CARBON 33 1/4W 5%
R20	1-241-457-45	CARBON 120 1/4W 5%
R21	1-217-570-00	METAL PLATE 2.2 5W 10%
R22	1-247-113-00	CARBON 180 1/4W 5%
R23	1-247-125-00	CARBON 560 1/4W 5%
R24	1-247-155-00	CARBON 10K 1/4W 5%
R25	1-247-099-00	CARBON 47 1/4W 5%
R26	1-247-153-00	CARBON 8.2K 1/4W 5%
R27	1-247-165-00	CARBON 27K 1/4W 5%
R28	1-247-141-00	CARBON 2.7K 1/4W 5%
R29	1-214-154-00	METAL FILM 8.2K 1/4W 1%
R30	1-214-745-00	METAL FILM 4.7K 1/4W 1%
R31	1-206-677-00	METAL OXIDE FILM 3.6K 2W 5%
R32	1-247-241-00	CARBON 1.2K 1/2W 5%
R33	1-247-157-00	CARBON 12K 1/4W 5%
R34	1-247-149-00	CARBON 5.6K 1/4W 5%
T1		FBL+PT5
T2		300NP-1-2

SWITCHING REGULATOR


Q1 2SC2534 Q2 2SC2534 POWER AMP
Q3 2SA1009 SWITCHING
IC1 SG3524N OSC
IC2 TA78012P 12V REG
Q4 2SC2542
Q5 2SC2542
CONVERTOR
Q6 2SC2439
Q7 2SA893A
Q8 2SC1890A
PULSE POWER AMP
Q9 2SA884
VOLTAGE DETECTOR
AC IN
C1 0.01 250V
L1
C2 0.01 250V
C4 2200P 400V
C6 2200P 400V
C3 2200P 400V
C5 2200P 400V
GRY
GRY
TO VOLTAGE SELECTOR
D13 BCR3AM-10
R2 150
R1 10 (2W)
F1 2A
D1 S4VB-60
+
-
L2 10μH
C7 330 200V
C8 330 200V
R3 100K (1/2W)
R4 100K (1/2W)
C9 22 400V
R5 270K (1W)
C10 2.2 50V
D10 RD5.6EB-3
R6 12K (1/4W)
R7 180K (2W)
R9 240K (1/2W)
R8 10K (1/4W)
R10 10K (3W)
R11 10K (3W)
F2 2A
C11 0.1
R12 2200
R13 8200 (1/4W)
R14 2200
D2 1S2348
C18 47 35V
R15 30K
C12 6800P
C33 2200P
15
1
9
COMP
C1 12
E1 11
C2 13
E2 14
OSC OUT 3
SHOT DOWN
RT CT GND
6 7 8 10
2 OUT 2 IN 1
GND 3
C19 1000 35V
R16 180 (1W)
R18 33
C13 0.015
R17 180 (1W)
R19 33
C14 0.015
T1
D11 SFORIG41
R20 120 (1/4W)
C15 220 10V
R22 180 (1/4W)
R21 2.2 (5W)
C30 0.01 630V
D3 RU-2M
D4 RU-2M
C16 0.47/250V
C17 0.47 250V
D5 RU-2M
D6 RU-2M
T2
D7 ESAC25-02C
Q6
Q7
Q8
L3 1.2mH
R25 47
R23 560
R24 10K
D8 ESAC25-02C
C20 47 100V
C21 100 63V
D15 RD16EB
R34 5600
C22 0.01
R26 8200
R27 27K
D12 RD6.2EB-1
R28 2700
R32 1200 (1/2W)
R33 12K
C23 0.047
C24 0.47 50V
C25 0.01
D14 RD24EB
R29 8200
R30 4700
C27 0.01
C26 1000 16V
C28 47 100V
L4 10μH
C29 0.01
R31 3600 (2W)
D8 ESAC25-02C
C31 470 35V
L5 10μH
C32 470 35V
POWER (+) OUT YEL
(+) SENS IN RED
(-) SENS BLK
UNREG +12V OUT RED
(GND) BLK

Ref. No.	Parts No.	Description
CCU-300 SWITCHING REGULATOR		
C1		POLYETHYLENE 0.01 250V
C2		POLYETHYLENE 0.01 250V
C3	1-161-737-00	CERAMIC 1000PF 20% 400V
C4	1-161-737-00	CERAMIC 1000PF 20% 400V
C5	1-161-737-00	CERAMIC 1000PF 20% 400V
C6	1-161-737-00	CERAMIC 1000PF 20% 400V
C7	1-127-461-00	ELECT 330 20% 200V
C8	1-127-461-00	ELECT 330 20% 200V
C9		ELECT 22 400V
C10		ELECT 2.2 50V
C11	1-130-632-00	METALIZED FILM 0.1 10% 50V
C12		0.0068
C13		15000PF
C14		15000PF
C15		ELECT 220 10V
C16	1-130-356-00	POLYESTER FILM 0.047 10% 250V
C17	1-130-356-00	POLYESTER FILM 0.047 10% 250V
C18		ELECT 47 35V
C19		ELECT 1000 35V
C20		ELECT 47 100V
C21		ELECT 100 63V
C22		0.01
C23		0.047
C24		0.47 50V
C25		0.01
C26		ELECT 1000 16V
C27		0.01
C28		ELECT 47 100V
C29		0.01
C30	1-130-141-00	POLYESTER FILM 0.01 630V
C31		ELECT 470 35V
C32		ELECT 470 35V
C33		0.0022 50V
D1	8-719-504-60	S4VB60
D2	8-719-932-48	1S2348H
D3	1-806-107-11	RU-2M
D4	1-806-107-11	RU-2M
D5	1-806-107-11	RU-2M
D6	1-806-107-11	RU-2M
D7	8-719-912-52	ESAC25-02C
D8	8-719-912-52	ESAC25-02C
D9	8-719-912-52	ESAC25-02C
D10	8-719-100-36	RD5.6E-B3
D11	1-806-236-11	SFOR1G41S
D12	8-719-100-37	RD6.2E-B1
D13	1-806-104-11	BCR3AM
D14	8-719-124-07	RD24E
D15	8-719-116-07	RD16E-B
F1	1-532-556-00	FUSE, TEMPERATURE M-147-2A
F2	1-532-556-00	FUSE, TEMPERATURE M-147-2A
IC1	8-759-935-24	SG3524N
IC2	8-759-280-12	TA78012AP
L1	1-421-328-11	COIL, CHOKE (FOR J, U/C)
	1-421-434-00	COIL, CHOKE (FOR AEP)
L2	1-421-329-00	10μH COIL, CHOKE
L3		1.2mH
L4	1-421-329-00	10μH COIL, CHOKE
L5	1-421-329-00	10μH COIL, CHOKE
Q1	1-806-095-11	2SC2534
Q2	1-806-095-11	2SC2534
Q3	1-806-094-11	2SA1009
Q4, 5	X-4869-209-0	2SC2542
Q6	1-806-124-11	2SC2438
Q7	8-729-612-77	2SA1027R
Q8	8-729-309-08	2SC1890A
Q9	8-765-020-00	2SA884
R1	1-208-260-00	CERAMIC 10 2W 10%
R2	1-247-111-00	CARBON 150 1/4W 5%
R3	1-247-288-00	CARBON 100K 1/2W 5%
R4	1-247-288-00	CARBON 100K 1/2W 5%
R5		270K 1W 5%
R6	1-247-157-00	CARBON 12K 1/4W 5%
R7	1-208-263-00	CERAMIC 180K 2W 10%
R8	1-247-155-00	CARBON 10K 1/4W 5%
R9		240K 1/2W
R10		CERAMIC 10K 3W 10%
R11		CERAMIC 10K 3W 10%
R12	1-247-139-00	CARBON 2.2K 1/4W 5%
R13	1-247-153-00	CARBON 8.2K 1/4W 5%
R14	1-247-139-00	CARBON 2.2K 1/4W 5%
R15	1-247-142-00	CARBON 30K 1/4W 5%
R16		180 1W 5%
R17		180 1W 5%
R18	1-247-095-00	CARBON 33 1/4W 5%
R19	1-247-095-00	CARBON 33 1/4W 5%
R20	1-241-457-45	CARBON 120 1/4W 5%
R21	1-217-570-00	METAL PLATE 2.2 5W 10%
R22	1-247-113-00	CARBON 180 1/4W 5%
R23	1-247-125-00	CARBON 560 1/4W 5%
R24	1-247-155-00	CARBON 10K 1/4W 5%
R25	1-247-099-00	CARBON 47 1/4W 5%
R26	1-247-153-00	CARBON 8.2K 1/4W 5%
R27	1-247-165-00	CARBON 27K 1/4W 5%
R28	1-247-141-00	CARBON 2.7K 1/4W 5%
R29	1-214-154-00	METAL FILM 8.2K 1/4W 1%
R30	1-214-745-00	METAL FILM 4.7K 1/4W 1%
R31	1-206-677-00	METAL OXIDE FILM 3.6K 2W 5%
R32	1-247-241-00	CARBON 1.2K 1/2W 5%
R33	1-247-157-00	CARBON 12K 1/4W 5%
R34	1-247-149-00	CARBON 5.6K 1/4W 5%
T1		FBL+PT5
T2		300NP-1-2

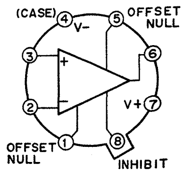
SG-31A BOARD (GENLOCK CONTROL SYSTEM) Serial No. Up to 11500


A
B
C
1
2
3
4
CN1
IC1
IC2
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
X1 (VXO)
S1
S2
RV1
RV2
RV3
RV4
RV5
RV6
TP1
TP3
TP4
TP6
TP7
TP8
TP9
TP10
TP11
TP12
E1

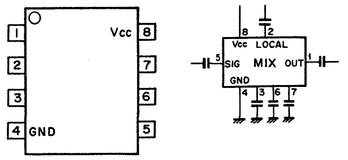
SG-31A—SOLDERING SIDE—

D1	A-1
D2	C-1
D3	A-2
D4	A-2
D5	A-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	A-3
D12	B-3
D13	B-3
D14	B-3
D16	B-3
D17	C-3
D18	C-3
D20	A-3
D21	A-4
D22	A-4
D23	C-3
D24	B-1
D25	A-3
D26	C-3
D27	C-4
E1	C-4
IC1	B-1
IC2	C-1
IC3	C-1
IC4	A-2
IC5	B-2
IC6	C-2
IC7	C-2
IC8	A-3
IC9	B-3
IC10	B-3
IC11	C-4
IC12	B-4
IC13	B-4
IC14	C-4
IC15	C-3
IC16	A-3
Q1	C-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	A-1
Q8	B-1
Q9	B-1
Q10	B-1
Q11	B-1
Q12	B-1
Q13	C-1
Q14	A-2
Q15	A-2
Q16	A-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	C-2
Q21	C-2
Q22	A-3
Q23	A-3
Q24	A-3
Q25	C-3
Q26	A-4
Q27	A-4
Q28	A-4
Q29	A-4
Q30	A-4
Q31	A-4
Q32	A-4
Q33	A-4
Q35	C-3
Q37	A-3
Q38	B-3
Q39	B-3
RV1	B-1
RV2	C-1
RV3	C-3
RV4	B-4
RV5	B-4
RV6	C-2
TP1	A-1
TP3	C-1
TP4	C-1
TP6	B-2
TP7	B-2
TP8	C-2
TP9	C-3
TP10	A-4
TP11	B-4
TP12	B-4

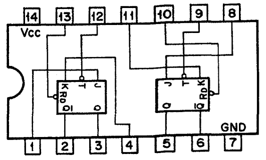
CA3140AT (RCA)
BI-MOS OPERATIONAL AMPLIFIER
—BOTTOM VIEW—


(CASE)
V-
OFFSET NULL
V+
OFFSET NULL
INHIBIT
1
2
3
4
5
6
7
8

SN16913P (TI)
BALANCED MIXER
—TOP VIEW—

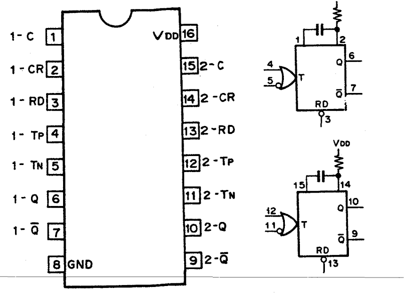

Vcc
GND
LOCAL
SIG
MIX
OUT
1
2
3
4
5
6
7
8

SN74107N (TI)
M53307P (MITSUBISHI)
TTL J-K FLIP FLOP WITH DIRECT RESET
—TOP VIEW—

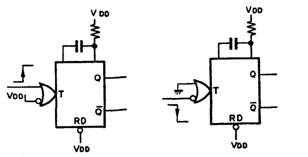

Vcc
GND
J
K
T
RD
Q
Q̄
1
2
3
4
5
6
7
8
9
10
11
12
13
14

INPUTS				OUT
RD	T	J	K	Qn+1
L	X	X	X	L
H	⎍	L	L	Qn
H	⎍	L	H	L
H	⎍	H	L	H
H	⎍	H	H	$\overline{Qn}$

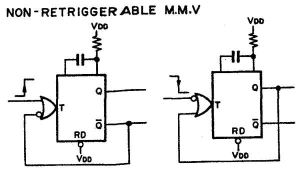
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
—TOP VIEW—

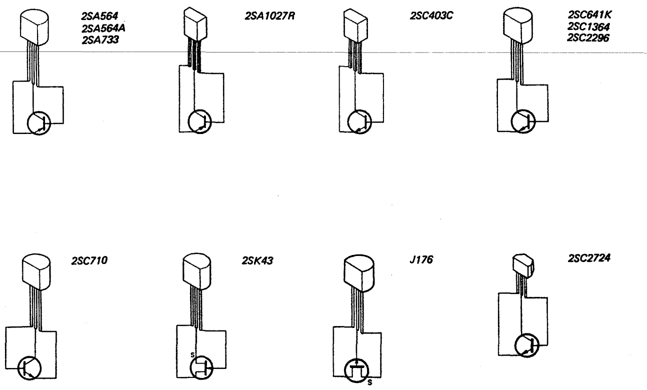

1-C
1-CR
1-RD
1-TP
1-TN
1-Q
1-Q̄
GND
VDD
2-C
2-CR
2-RD
2-TP
2-TN
2-Q
2-Q̄
VDD
T
RD

RETRIGGERABLE M.M.V

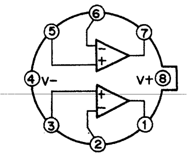


NON-RETRIGGERABLE M.M.V

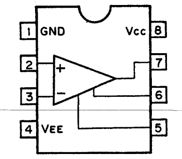



2SA564
2SA564A
2SA733
2SA1027R
2SC403C
2SC641K
2SC1364
2SC2296
2SC710
2SK43
J176
2SC2724
S
S

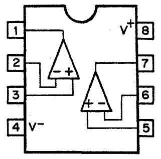
µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
—BOTTOM VIEW—


1
2
3
4 V-
5
6
7
V+ 8

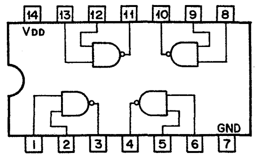
µPC311C (NEC)
VOLTAGE COMPARATOR
—TOP VIEW—

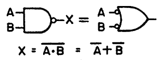

1 GND
2
3
4 VEE
5
6
7
Vcc 8

TL082CP (TI)
TL082ACP (TI)
TL082BCP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
—TOP VIEW—


1
2
3
4 V-
5
6
7
V+ 8

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011C (NEC)
C-MOS 2-INPUT NAND GATE
—TOP VIEW—

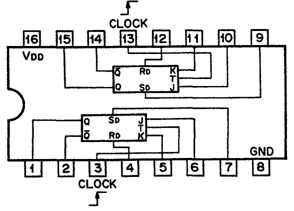

VDD
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14



$X = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4027AE/BE (RCA)
MC14027BPC (MOTOROLA)
F4027BPC (FSC)
TC4027BP (TOSHIBA)
µPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
—TOP VIEW—


CLOCK
VDD
GND
SD
RD
J
K
Q
Q̄
CLOCK
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

DIRECT R-S FLIP FLOP

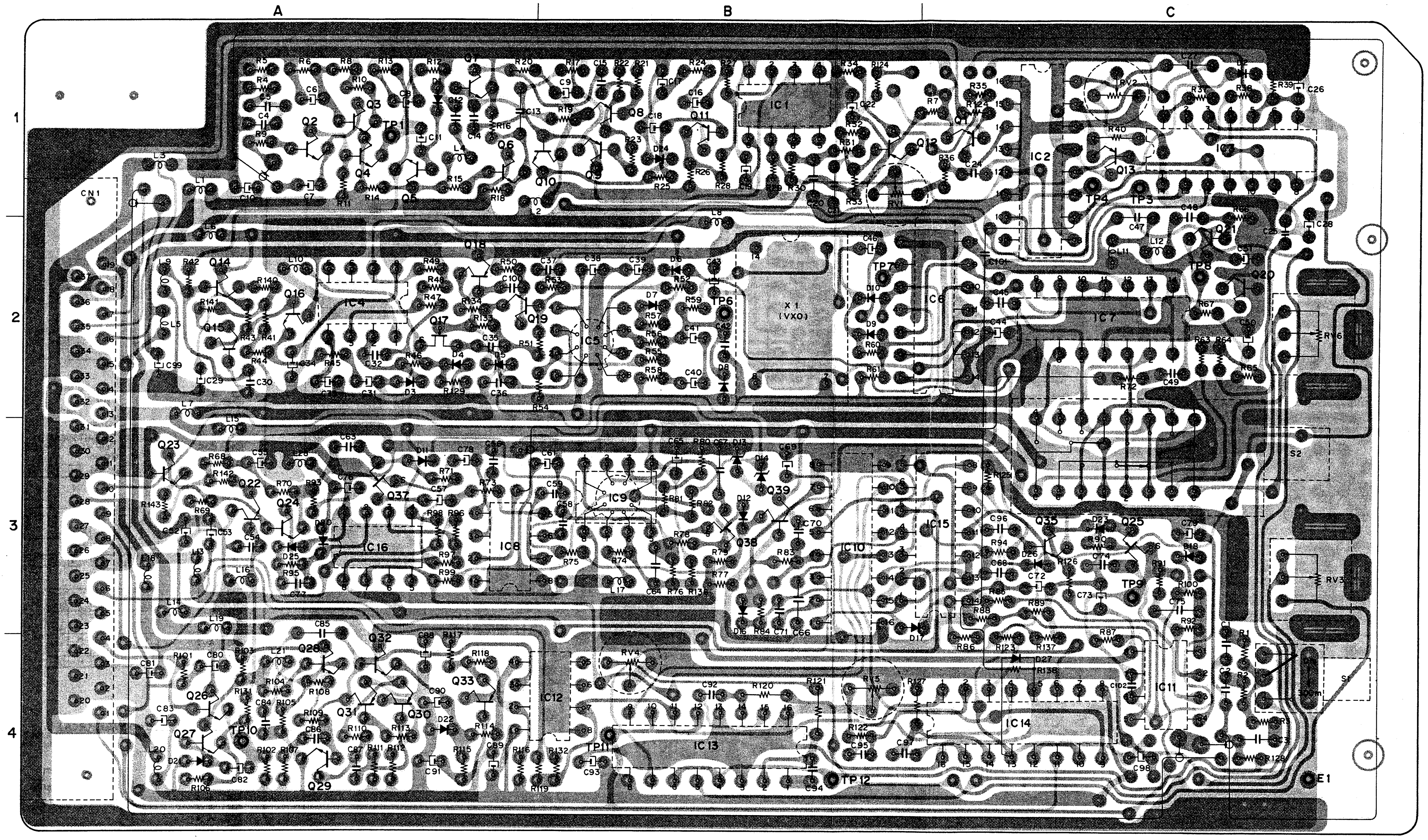
SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

J-K FLIP FLOP

tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

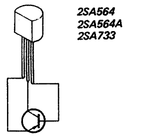
CLOCK T; ⎍
tn; BEFORE CLOCK
tn+1; AFTER CLOCK

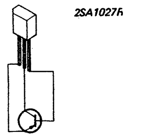
SG-31A BOARD (GENLOCK CONTROL SYSTEM) **Serial No. 11501 and higher**

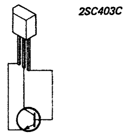

A
B
C
1
2
3
4
CN1
X1
(VXO)
IC1
IC2
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
TP1
TP3
TP4
TP6
TP7
TP8
TP9
TP10
TP11
TP12
RV2
RV3
RV4
S1
S2
E1

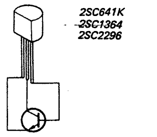
SG-31A—SOLDERING SIDE—

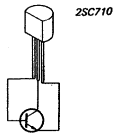
D1	A-1
D2	C-1
D3	A-2
D4	A-2
D5	A-2
D6	B-2
D7	B-2
D8	B-2
D9	B-2
D10	B-2
D11	A-3
D12	B-3
D13	B-3
D14	B-3
D16	B-3
D17	C-3
D18	C-3
D20	A-3
D21	A-4
D22	A-4
D23	C-3
D24	B-1
D25	A-3
D26	C-3
D27	C-4
E1	C-4
IC1	B-1
IC2	C-1
IC3	C-1
IC4	A-2
IC5	B-2
IC6	C-2
IC7	C-2
IC8	A-3
IC9	B-3
IC10	B-3
IC11	C-4
IC12	B-4
IC13	B-4
IC14	C-4
IC15	C-3
IC16	A-3
Q1	C-1
Q2	A-1
Q3	A-1
Q4	A-1
Q5	A-1
Q6	A-1
Q7	A-1
Q8	B-1
Q9	B-1
Q10	B-1
Q11	B-1
Q12	B-1
Q13	C-1
Q14	A-2
Q15	A-2
Q16	A-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	C-2
Q21	C-2
Q22	A-3
Q23	A-3
Q24	A-3
Q25	C-3
Q26	A-4
Q27	A-4
Q28	A-4
Q29	A-4
Q30	A-4
Q31	A-4
Q32	A-4
Q33	A-4
Q35	C-3
Q37	A-3
Q38	B-3
Q39	B-3
RV1	B-1
RV2	C-1
RV3	C-3
RV4	B-4
RV5	B-4
RV6	C-2
TP1	A-1
TP3	C-1
TP4	C-1
TP6	B-2
TP7	B-2
TP8	C-2
TP9	C-3
TP10	A-4
TP11	B-4
TP12	B-4

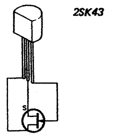

2SA564
2SA564A
2SA733

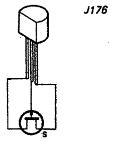


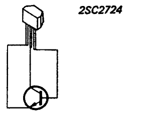



2SC641K
~~2SC1364~~
2SC2296

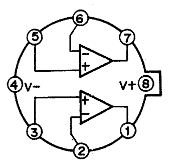




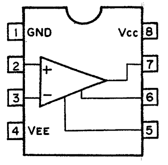




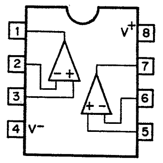
µA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
—BOTTOM VIEW—


1
2
3
4
V−
5
6
7
V+
8

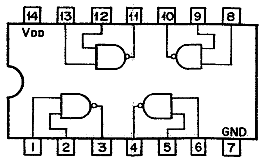
µPC311C (NEC)
VOLTAGE COMPARATOR
—TOP VIEW—

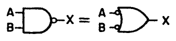

1 GND
2
3
4 VEE
8 Vcc
7
6
5

TL082CP (TI)
TL082ACP (TI)
TL082BCP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
—TOP VIEW—


1
2
3
4 V−
8 V+
7
6
5

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
µPD4011C (NEC)
C-MOS 2-INPUT NAND GATE
—TOP VIEW—

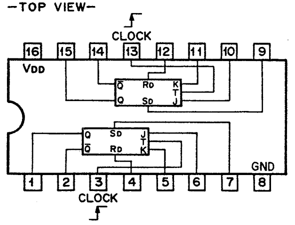

14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



$X = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4027AE/BE (RCA)
MC14027BPC (MOTOROLA)
F4027BPC (FSC)
TC4027BP (TOSHIBA)
µPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
—TOP VIEW—


CLOCK
16 15 14 13 12 11 10 9
VDD
GND
1 2 3 4 5 6 7 8
CLOCK

DIRECT R-S
FLIP FLOP

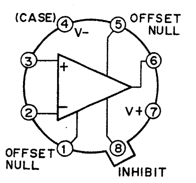
SD	RD	Q
0	0	Qn
0	1	0
1	0	1
1	1	0

J-K
FLIP FLOP

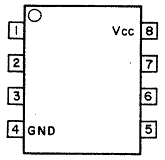
tn		tn+1
J	K	Q
0	0	Qn
0	1	0
1	0	1
1	1	$\overline{Qn}$

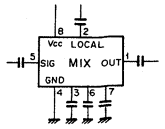
CLOCK T; ⎍
tn; BEFORE CLOCK
tn+1; AFTER CLOCK

CA3140AT (RCA)
BI-MOS OPERATIONAL AMPLIFIER
—BOTTOM VIEW—

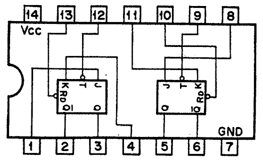

(CASE)
4
V−
5
OFFSET NULL
3
6
2
V+
7
OFFSET NULL
1
8
INHIBIT

SN16913P (TI)
BALANCED MIXER
—TOP VIEW—


1
2
3
4 GND
8
Vcc
7
6
5

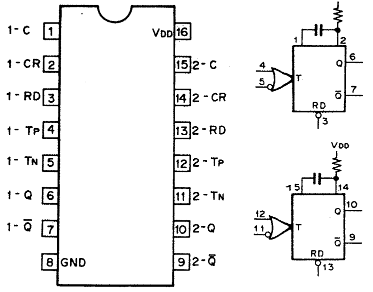

8
2
Vcc LOCAL
5
SIG MIX OUT
1
GND
4 3 6 7

SN74107N (TI)
M53307P (MITSUBISHI)
TTL J-K FLIP FLOP WITH DIRECT RESET
—TOP VIEW—

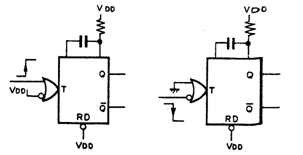

14 13 12 11 10 9 8
Vcc
K
T
J
RD
Q
Q
J
T
K
RD
Q
Q
GND
1 2 3 4 5 6 7

INPUTS				OUT
RD	T	J	K	Qn+1
L	X	X	X	L
H	⎍	L	L	Qn
H	⎍	L	H	L
H	⎍	H	L	H
H	⎍	H	H	$\overline{Qn}$

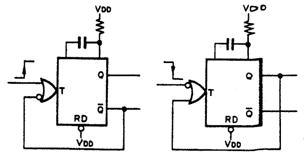
CD4098BE (RCA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
—TOP VIEW—


1-C 1
1-CR 2
1-RD 3
1-TP 4
1-TN 5
1-Q 6
1-Q̄ 7
8 GND
VDD 16
15 2-C
14 2-CR
13 2-RD
12 2-TP
11 2-TN
10 2-Q
9 2-Q̄
VDD
1
2
4
5
6
7
3
VDD
15
14
12
11
10
9
13
T
Q
Q̄
RD

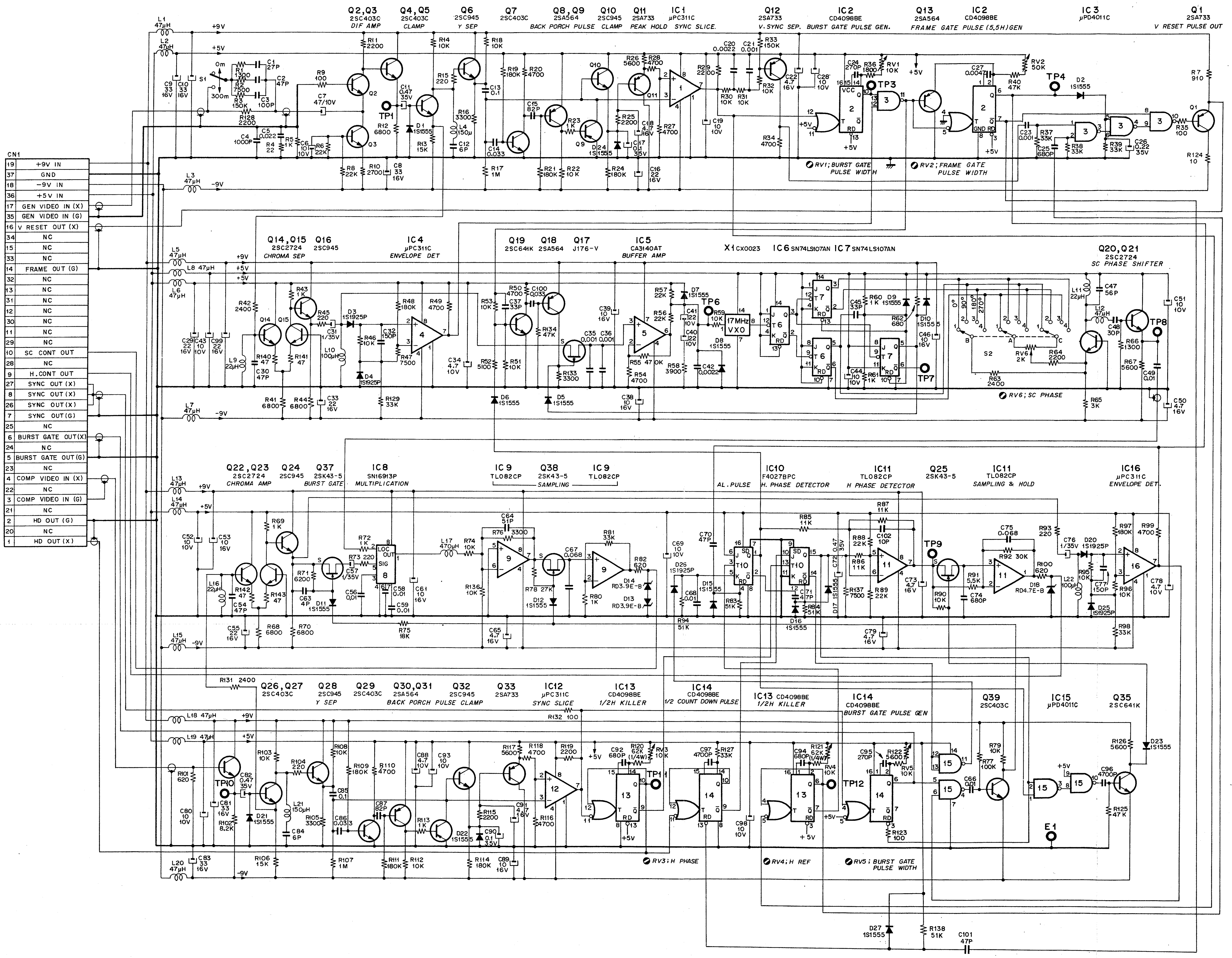
RETRIGGERABLE M.M.V

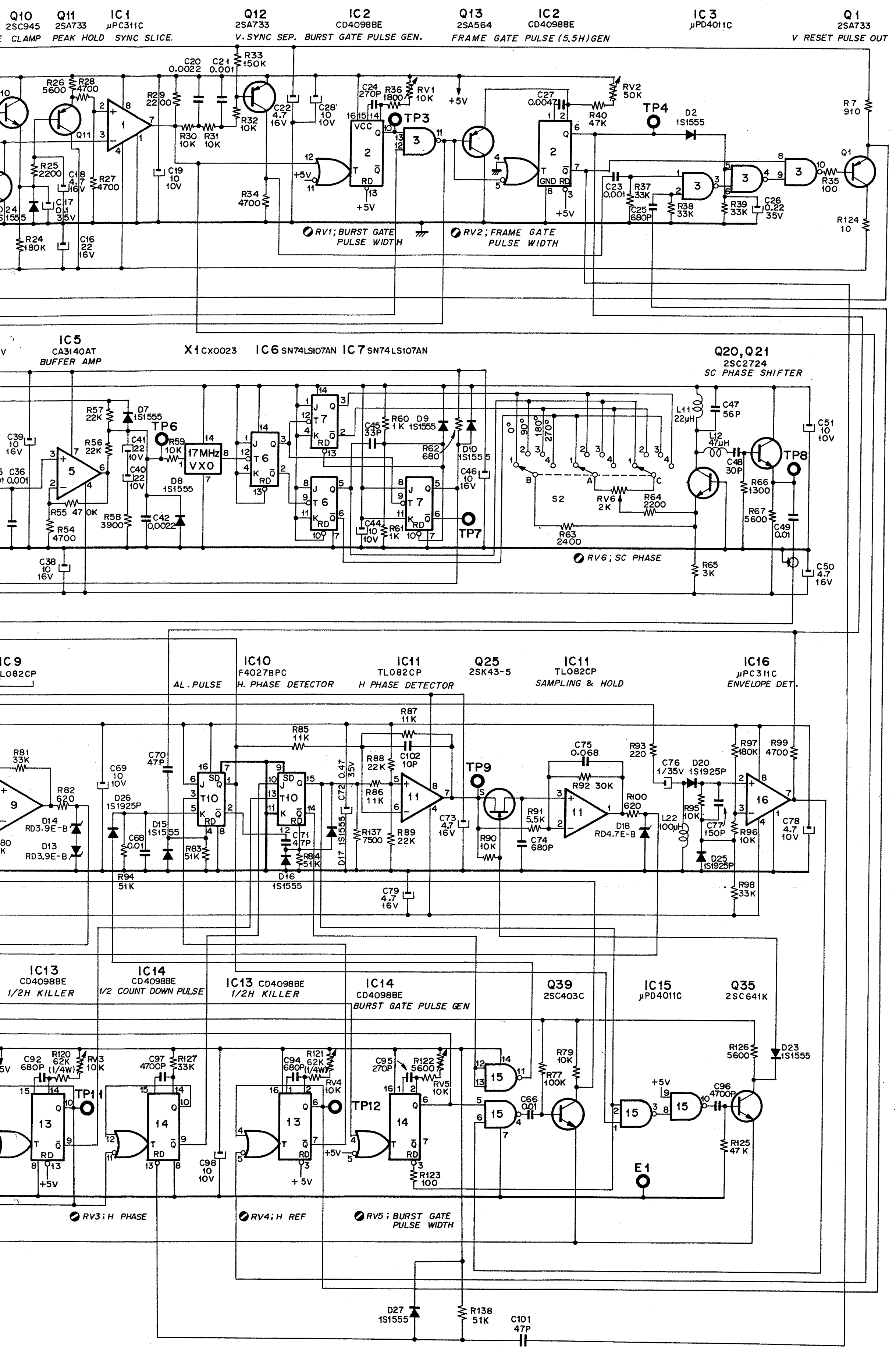

VDD
VDD
T
Q
Q̄
RD
VDD

NON-RETRIGGERABLE M.M.V


VDD
VDD
T
Q
Q̄
RD
VDD

SG-31A BOARD (GENLOCK CONTROL SYSTEM) Serial No. 11501 and higher


CN1
19 +9V IN
37 GND
18 −9V IN
36 +5V IN
17 GEN VIDEO IN (X)
35 GEN VIDEO IN (G)
16 V RESET OUT (X)
34 NC
15 NC
33 NC
14 FRAME OUT (G)
32 NC
13 NC
31 NC
12 NC
30 NC
11 NC
29 NC
10 SC CONT OUT
28 NC
9 H.CONT OUT
27 SYNC OUT (X)
8 SYNC OUT (X)
26 SYNC OUT (X)
7 SYNC OUT (G)
25 NC
6 BURST GATE OUT (X)
24 NC
5 BURST GATE OUT (G)
23 NC
4 COMP VIDEO IN (X)
22 NC
3 COMP VIDEO IN (G)
21 NC
2 HD OUT (G)
20 NC
1 HD OUT (X)
Q2,Q3 2SC403C DIF AMP
Q4,Q5 2SC403C CLAMP
Q6 2SC945 Y SEP
Q7 2SC403C
Q8,Q9 2SA564 BACK PORCH PULSE CLAMP
Q10 2SC945
Q11 2SA733 PEAK HOLD
IC1 μPC311C SYNC SLICE.
Q12 2SA733 V.SYNC SEP.
IC2 CD4098BE BURST GATE PULSE GEN.
Q13 2SA564 FRAME GATE PULSE (5,5H)GEN
IC2 CD4098BE
IC3 μPD4011C
Q1 2SA733 V RESET PULSE OUT
RV1; BURST GATE PULSE WIDTH
RV2; FRAME GATE PULSE WIDTH
TP1
TP3
TP4
Q14,Q15 2SC2724 CHROMA SEP
Q16 2SC945
IC4 μPC311C ENVELOPE DET
Q19 2SC641K
Q18 2SA564
Q17 J176-V
IC5 CA3140AT BUFFER AMP
X1 CX0023
IC6 SN74LS107AN
IC7 SN74LS107AN
Q20,Q21 2SC2724 SC PHASE SHIFTER
17MHz VXO
S2
RV6; SC PHASE
TP6
TP7
TP8
Q22,Q23 2SC2724 CHROMA AMP
Q24 2SC945
Q37 2SK43-5 BURST GATE
IC8 SN16913P MULTIPLICATION
IC9 TL082CP
Q38 2SK43-5
IC9 TL082CP
SAMPLING
IC10 F4027BPC AL.PULSE H. PHASE DETECTOR
IC11 TL082CP H PHASE DETECTOR
Q25 2SK43-5
IC11 TL082CP SAMPLING & HOLD
IC16 μPC311C ENVELOPE DET.
TP9
Q26,Q27 2SC403C
Q28 2SC945 Y SEP
Q29 2SC403C
Q30,Q31 2SA564 BACK PORCH PULSE CLAMP
Q32 2SC945
Q33 2SA733
IC12 μPC311C SYNC SLICE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE 1/2 COUNT DOWN PULSE
IC13 CD4098BE 1/2H KILLER
IC14 CD4098BE BURST GATE PULSE GEN
Q39 2SC403C
IC15 μPD4011C
Q35 2SC641K
TP10
TP11
TP12
E1
RV3; H PHASE
RV4; H REF
RV5; BURST GATE PULSE WIDTH


Q10
2SC945
CLAMP
Q11
2SA733
PEAK HOLD
IC1
μPC311C
SYNC SLICE.
Q12
2SA733
V.SYNC SEP.
IC2
CD4098BE
BURST GATE PULSE GEN.
Q13
2SA564
IC2
CD4098BE
FRAME GATE PULSE (5,5H)GEN
IC3
μPD4011C
Q1
2SA733
V RESET PULSE OUT
TP3
TP4
RV1; BURST GATE PULSE WIDTH
RV2; FRAME GATE PULSE WIDTH
IC5
CA3140AT
BUFFER AMP
X1 CX0023
IC6 SN74LS107AN
IC7 SN74LS107AN
Q20,Q21
2SC2724
SC PHASE SHIFTER
TP6
17MHz VXO
TP7
TP8
S2
RV6; SC PHASE
IC9
TL082CP
AL. PULSE
IC10
F4027BPC
H. PHASE DETECTOR
IC11
TL082CP
H PHASE DETECTOR
Q25
2SK43-5
IC11
TL082CP
SAMPLING & HOLD
IC16
μPC311C
ENVELOPE DET.
TP9
IC13
CD4098BE
1/2H KILLER
IC14
CD4098BE
1/2 COUNT DOWN PULSE
IC13 CD4098BE
1/2H KILLER
IC14
CD4098BE
BURST GATE PULSE GEN
Q39
2SC403C
IC15
μPD4011C
Q35
2SC641K
TP11
TP12
E1
RV3; H PHASE
RV4; H REF
RV5; BURST GATE PULSE WIDTH

NOTE:

1	IC9	μA798HC ➡ TL082CP
	S/N	10501 AND HIGHER

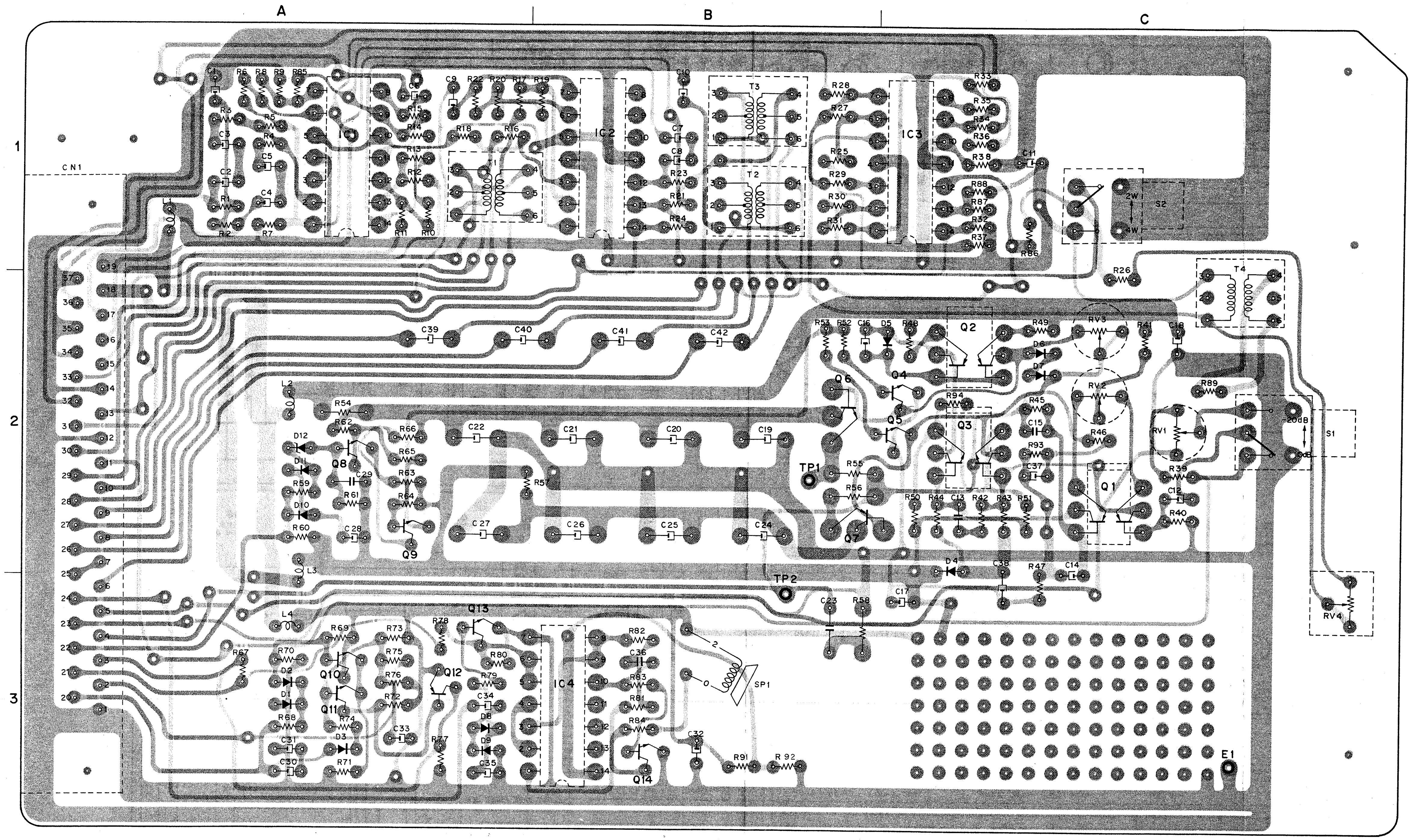
2	C21	0.0022 ➡ 0.001
	S/N	10901 AND HIGHER

3	Q14 Q15 Q22 Q23	2SC403C ➡ 2SC2724
	R140 R141 R142 R143	ADDED 47Ω
	S/N	11001 AND HIGHER

4	R42 R131	3300 ➡ 2400
	S/N	11101 AND HIGHER

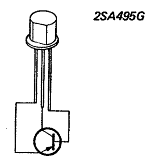
J : Serial No. 15401 and higher
U/C : Serial No. 10401 and higher
AEP : Serial No. 10601 and higher
BRZ : Serial No. 10001 and higher

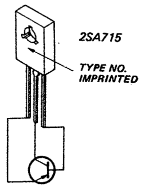
AU-14 BOARD (AUDIO SYSTEM)

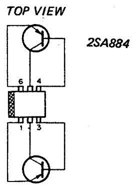

A
B
C
1
2
3
CN1
IC1
IC2
IC3
IC4
T1
T2
T3
T4
S1
S2
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
RV1
RV2
RV3
RV4
TP1
TP2
E1
SP1
L1
L2
L3
L4
-20dB
0dB

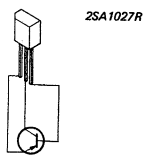
AU-14 -SOLDERING SIDE-

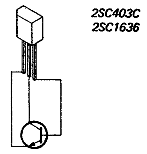
D1	A-3
D2	A-3
D3	A-3
D4	C-2
D5	C-2
D6	C-2
D7	C-2
D8	A-3
D9	A-3
D10	A-2
D11	A-2
D12	A-2
E1	C-3
IC1	A-1
IC2	B-1
IC3	C-1
IC4	B-3
Q1	C-2
Q2	C-2
Q3	C-2
Q4	C-2
Q5	C-2
Q6	B-2
Q7	B-2
Q8	A-2
Q9	A-2
Q10	A-3
Q11	A-3
Q12	A-3
Q13	A-3
Q14	B-3
RV1	C-2
RV2	C-2
RV3	C-2
RV4	C-3
TP1	B-2
TP2	B-3

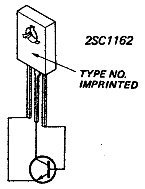


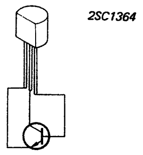

2SA715
TYPE NO. IMPRINTED

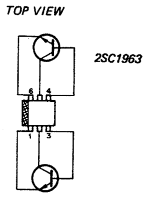

TOP VIEW
2SA884



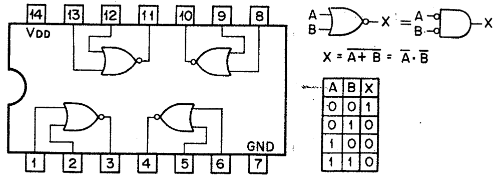

2SC403C
2SC1636


2SC1162
TYPE NO. IMPRINTED




TOP VIEW
2SC1963

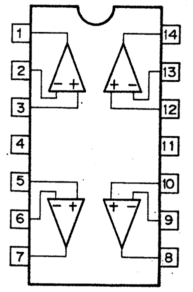
CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
μPD4001C (NEC)
C-MOS 2-INPUT NOR GATE
-TOP VIEW-


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7
A
B
X
A
B
X

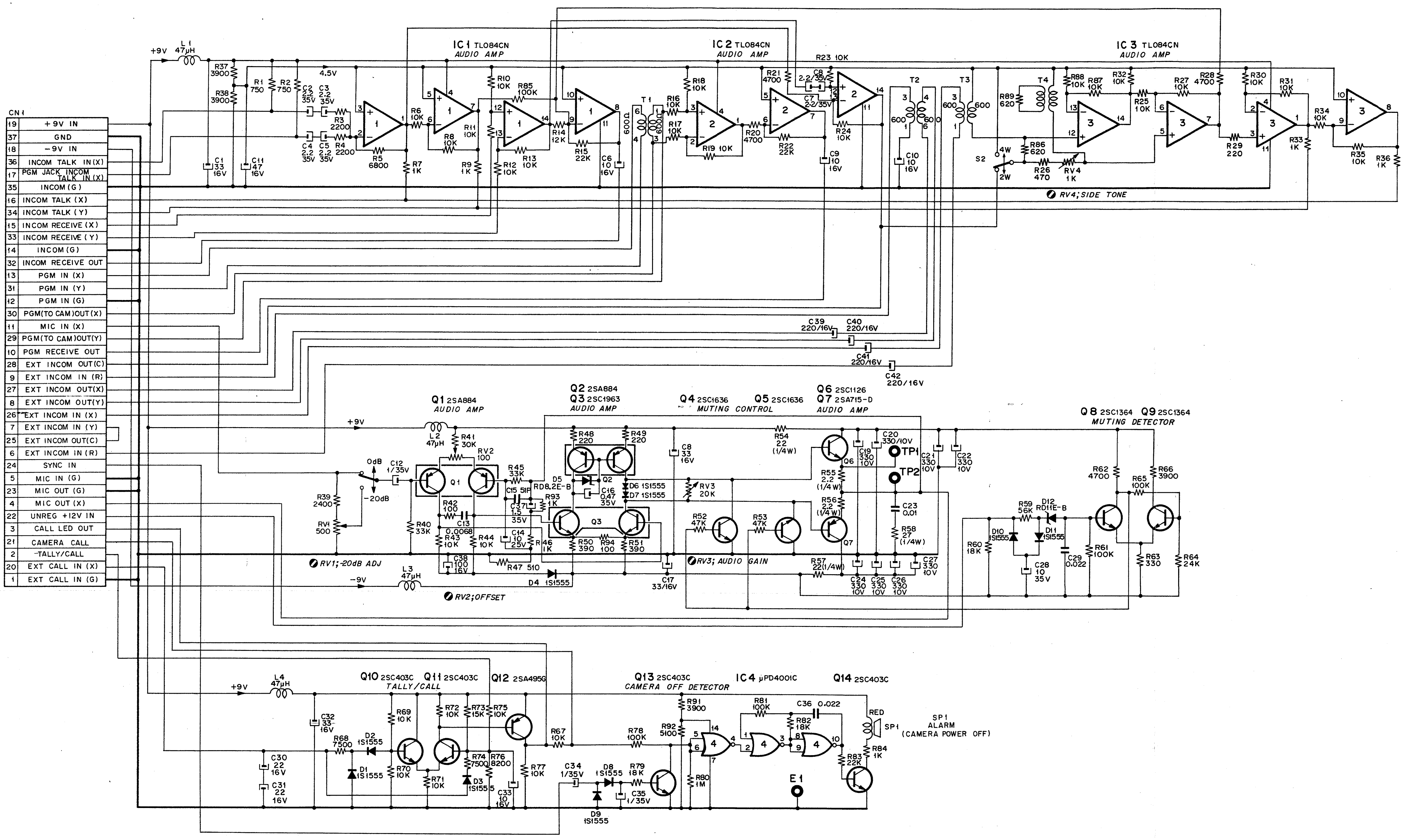
$X = \overline{A+B} = \overline{A} \cdot \overline{B}$

A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

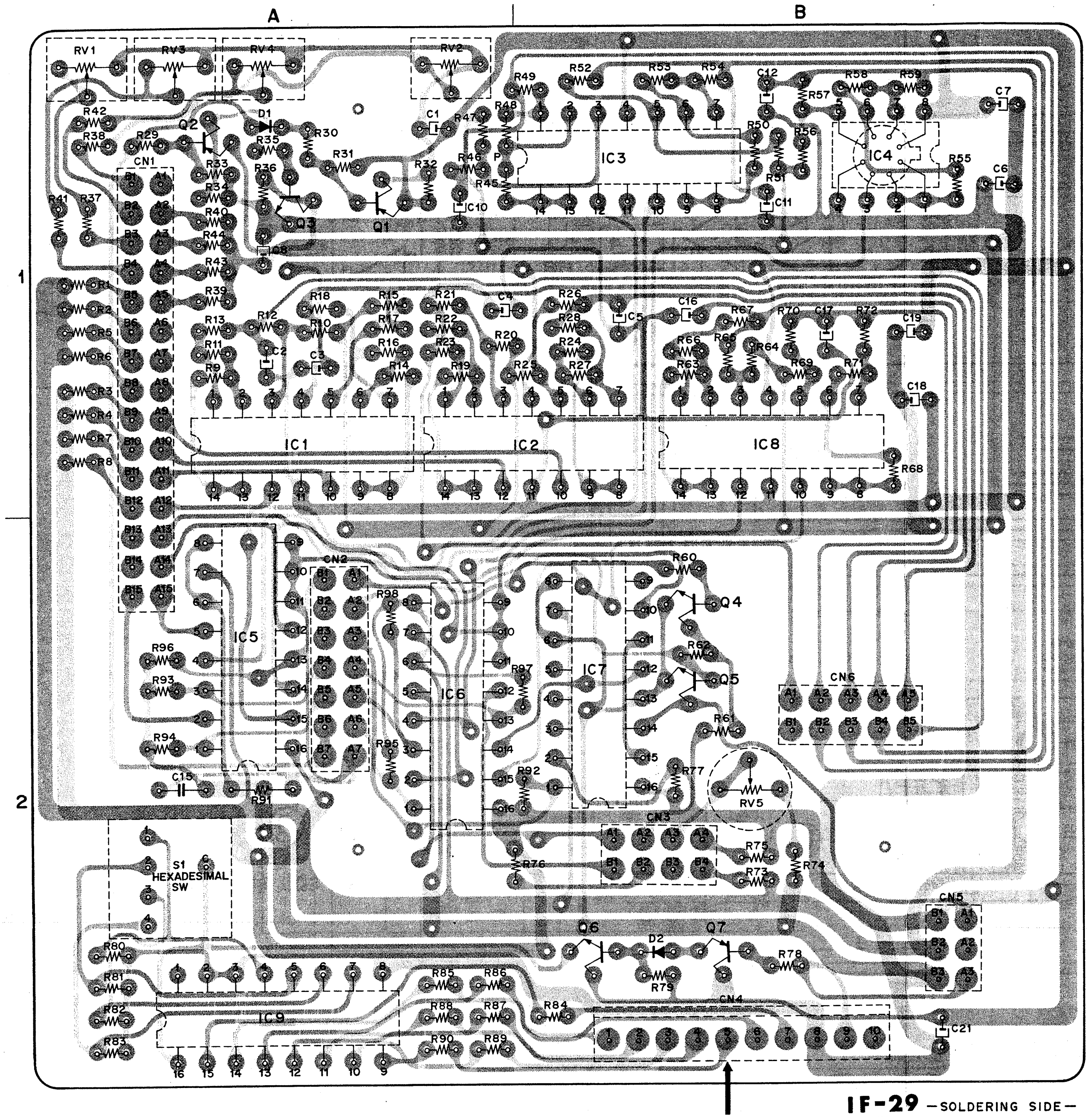
TL084CN
OPERATIONAL AMPLIFIER
(J FET-INPUT)
-TOP VIEW-


1
2
3
4
5
6
7
14
13
12
11
10
9
8

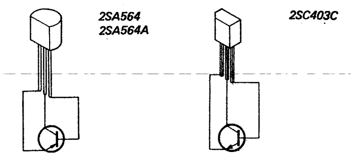
AU-14 BOARD (AUDIO SYSTEM)

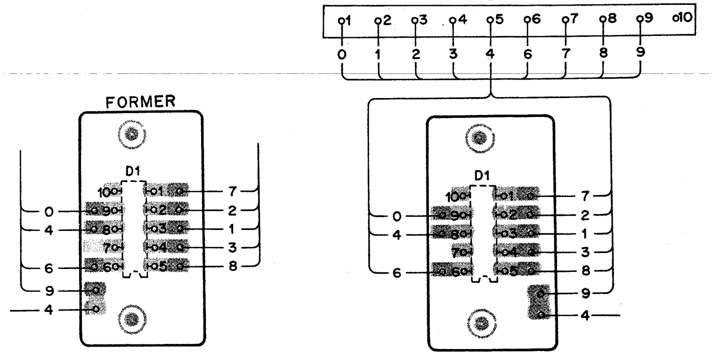

CN1
19 +9V IN
37 GND
18 −9V IN
36 INCOM TALK IN(X)
17 PGM JACK INCOM TALK IN(X)
35 INCOM(G)
16 INCOM TALK (X)
34 INCOM TALK (Y)
15 INCOM RECEIVE (X)
33 INCOM RECEIVE (Y)
14 INCOM (G)
32 INCOM RECEIVE OUT
13 PGM IN (X)
31 PGM IN (Y)
12 PGM IN (G)
30 PGM(TO CAM)OUT(X)
11 MIC IN (X)
29 PGM(TO CAM)OUT(Y)
10 PGM RECEIVE OUT
28 EXT INCOM OUT(C)
9 EXT INCOM IN (R)
27 EXT INCOM OUT(X)
8 EXT INCOM OUT(Y)
26 EXT INCOM IN (X)
7 EXT INCOM IN (Y)
25 EXT INCOM OUT(C)
6 EXT INCOM IN (R)
24 SYNC IN
5 MIC IN (G)
23 MIC OUT (G)
4 MIC OUT (X)
22 UNREG +12V IN
3 CALL LED OUT
21 CAMERA CALL
2 TALLY/CALL
20 EXT CALL IN (X)
1 EXT CALL IN (G)
IC1 TL084CN AUDIO AMP
IC2 TL084CN AUDIO AMP
IC3 TL084CN AUDIO AMP
+9V
L1 47μH
4.5V
T1
T2
T3
T4
S2
4W
2W
RV4; SIDE TONE
C39 220/16V
C40 220/16V
C41 220/16V
C42 220/16V
Q1 2SA884 AUDIO AMP
Q2 2SA884
Q3 2SC1963 AUDIO AMP
Q4 2SC1636 Q5 2SC1636 MUTING CONTROL
Q6 2SC1126
Q7 2SA715-D AUDIO AMP
Q8 2SC1364 Q9 2SC1364 MUTING DETECTOR
0dB
−20dB
TP1
TP2
RV1; −20dB ADJ
RV2; OFFSET
RV3; AUDIO GAIN
−9V
L3 47μH
Q10 2SC403C Q11 2SC403C TALLY/CALL
Q12 2SA495G
Q13 2SC403C CAMERA OFF DETECTOR
IC4 μPD4001C
Q14 2SC403C
L4 47μH
E1
RED
SP1 ALARM (CAMERA POWER OFF)

IF-29 BOARD (CAMERA CONTROL SYSTEM 2)
LP-10 BOARD


A
B
1
2
RV1
RV2
RV3
RV4
RV5
CN1
CN2
CN3
CN4
CN5
CN6
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
Q1
Q2
Q3
Q4
Q5
Q6
Q7
D1
D2
S1
HEXADESIMAL
SW
IF-29 -SOLDERING SIDE-

CN1	A - 1, 2
CN2	A - 2
CN3	B - 2
CN4	B - 2
CN5	B - 2
CN6	B - 2
D1	A - 1
D2	B - 2
IC1	A - 1
IC2	A, B - 1
IC3	B - 1
IC4	B - 1
IC5	A - 2
IC6	A - 2
IC7	B - 2
IC8	B - 1
IC9	A - 2
Q1	A - 1
Q2	A - 1
Q3	A - 1
Q4	B - 2
Q5	B - 2
Q6	B - 2
Q7	B - 2
RV1	A - 1
RV2	A - 1
RV3	A - 1
RV4	A - 1
RV5	B - 2

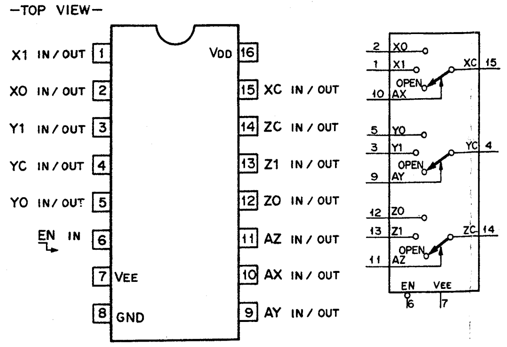

2SA564
2SA564A
2SC403C


o1 o2 o3 o4 o5 o6 o7 o8 o9 o10
0 1 2 3 4 6 7 8 9
FORMER
D1
10
8
7
6
1
2
3
4
5
0
4
6
9
7
2
1
3
8

LP-10 **LP-10**

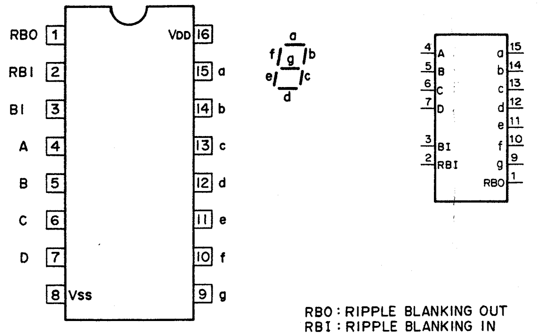
CD4053BE (RCA)
MC14053BCP (MOTOROLA)
TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER

-TOP VIEW-


X1 IN / OUT 1
X0 IN / OUT 2
Y1 IN / OUT 3
YC IN / OUT 4
Y0 IN / OUT 5
EN IN 6
7 VEE
8 GND
VDD 16
15 XC IN / OUT
14 ZC IN / OUT
13 Z1 IN / OUT
12 Z0 IN / OUT
11 AZ IN / OUT
10 AX IN / OUT
9 AY IN / OUT
X0
X1
XC
OPEN
AX
Y0
Y1
YC
AY
Z0
Z1
ZC
AZ
EN
VEE

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

TC5022BP (TOSHIBA)
C-MOS BCD-TO-SEVEN-SEGMENT DECODER/DRIVER
-TOP VIEW-

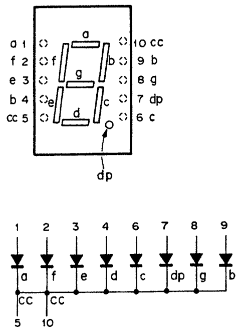

RBO 1
RBI 2
BI 3
A 4
B 5
C 6
D 7
8 Vss
VDD 16
15 a
14 b
13 c
12 d
11 e
10 f
9 g
a
b
c
d
e
f
g
A
B
C
D
BI
RBI
RBO

RBO : RIPPLE BLANKING OUT
RBI : RIPPLE BLANKING IN
BI : BLANKING IN

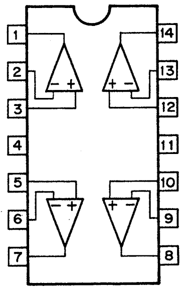
INPUT						OUTPUT								DISPLAY (HEXADECIMAL)	DECIMAL
BI	RBI	A	B	C	D	a	b	c	d	e	f	g	RBO		
1	X	X	X	X	X	0	0	0	0	0	0	0	✱	BLANK	
0	1	0	0	0	0	0	0	0	0	0	0	0	1	BLANK	
0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
0	X	1	0	0	0	0	1	1	0	0	0	0	0	1	1
0	X	0	1	0	0	1	1	0	1	1	0	1	0	2	2
0	X	1	1	0	0	1	1	1	1	0	0	1	0	3	3
0	X	0	0	1	0	0	1	1	0	0	1	1	0	4	4
0	X	1	0	1	0	1	0	1	1	0	1	1	0	5	5
0	X	0	1	1	0	1	0	1	1	1	1	1	0	6	6
0	X	1	1	1	0	1	1	1	0	0	1	0	0	7	7
0	X	0	0	0	1	1	1	1	1	1	1	1	0	8	8
0	X	1	0	0	1	1	1	1	1	0	1	1	0	9	9
0	X	0	1	0	1	1	1	1	1	1	1	0	0	0	10
0	X	1	1	0	1	0	1	1	0	0	0	0	0	1	11
0	X	0	0	1	1	1	1	0	1	1	0	1	0	2	12
0	X	1	0	1	1	1	1	1	1	0	0	1	0	3	13
0	X	0	1	1	1	0	1	1	0	0	1	1	0	4	14
0	X	1	1	1	1	1	0	1	1	0	1	1	0	5	15

X : DON'T CARE
✱ : UNDETERMINED

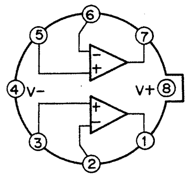
TLR312 (TOSHBA)
7-SEGMENT LED (RED)
-TOP VIEW-


a 1
f 2
e 3
b 4
cc 5
10 cc
9 b
8 g
7 dp
6 c
a
b
c
d
e
f
g
dp
1 2 3 4 6 7 8 9
cc
cc
5
10

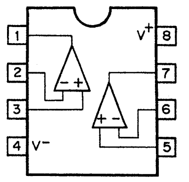
TLO64CN (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)


1
2
3
4
5
6
7
14
13
12
11
10
9
8

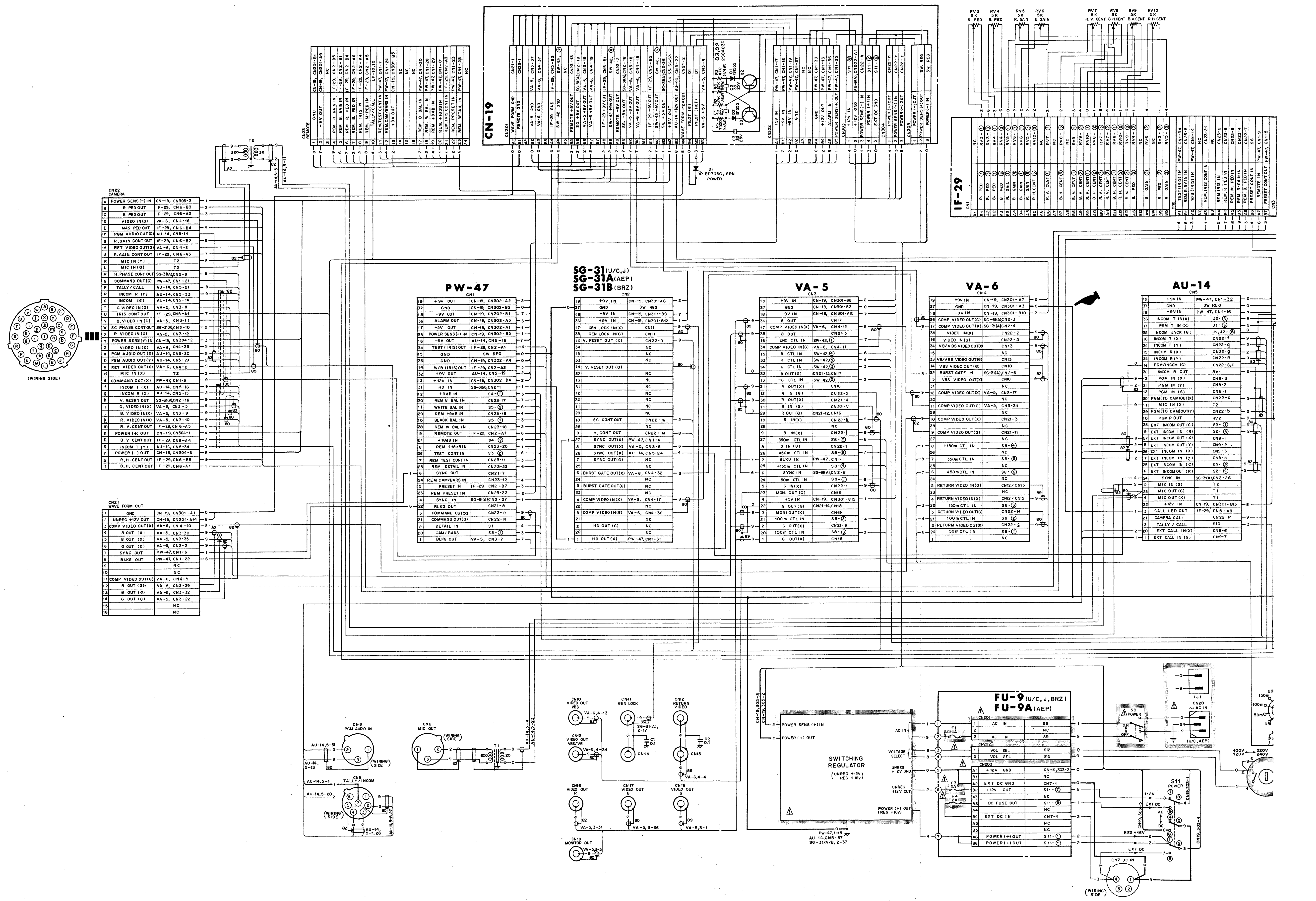
μA798HC (FSC)
DUAL OPERATIONAL AMPLIFIERS
- BOTTOM VIEW -

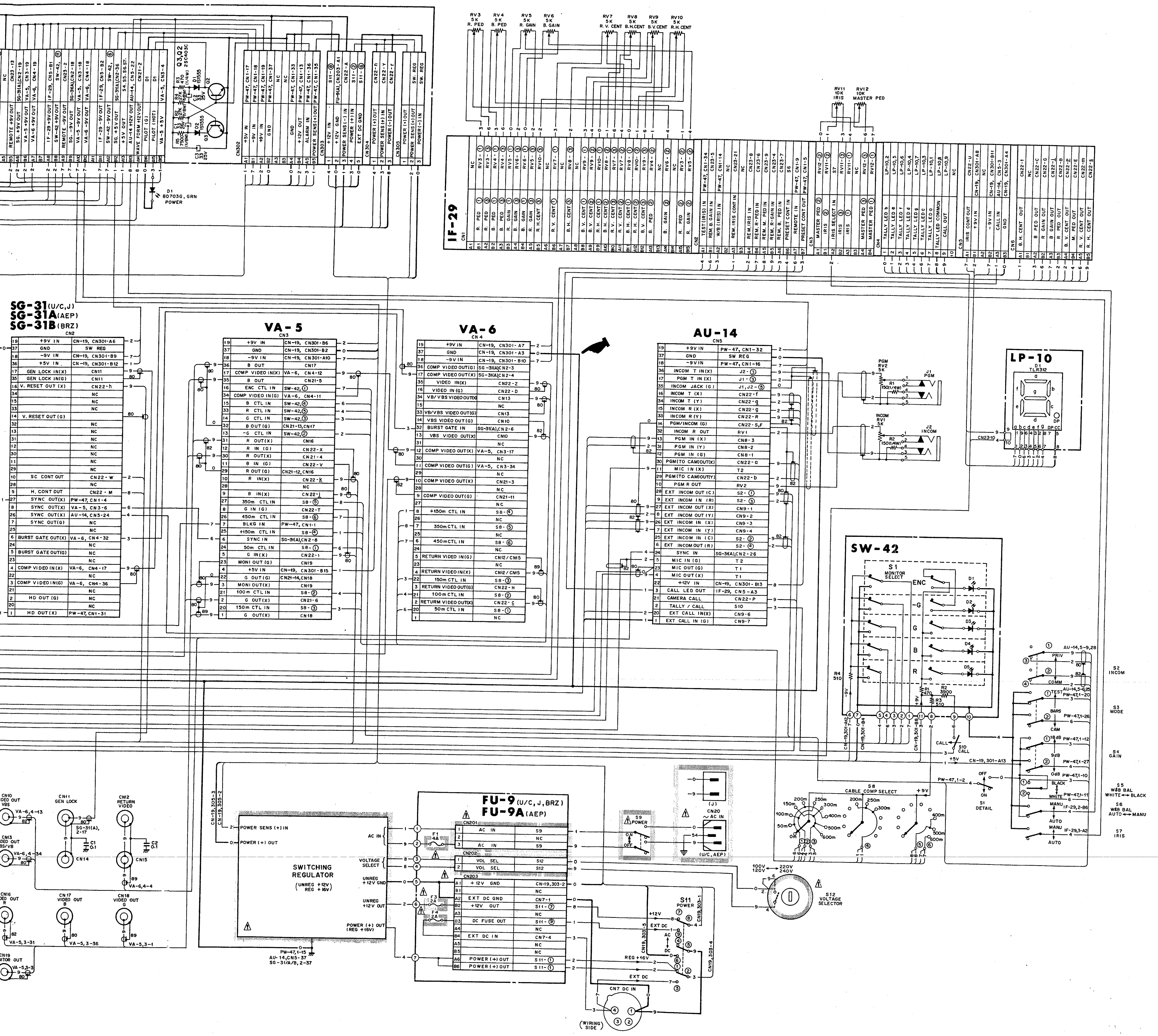

1
2
3
4 V−
5
6
7
V+ 8

TLO82CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
- TOP VIEW -

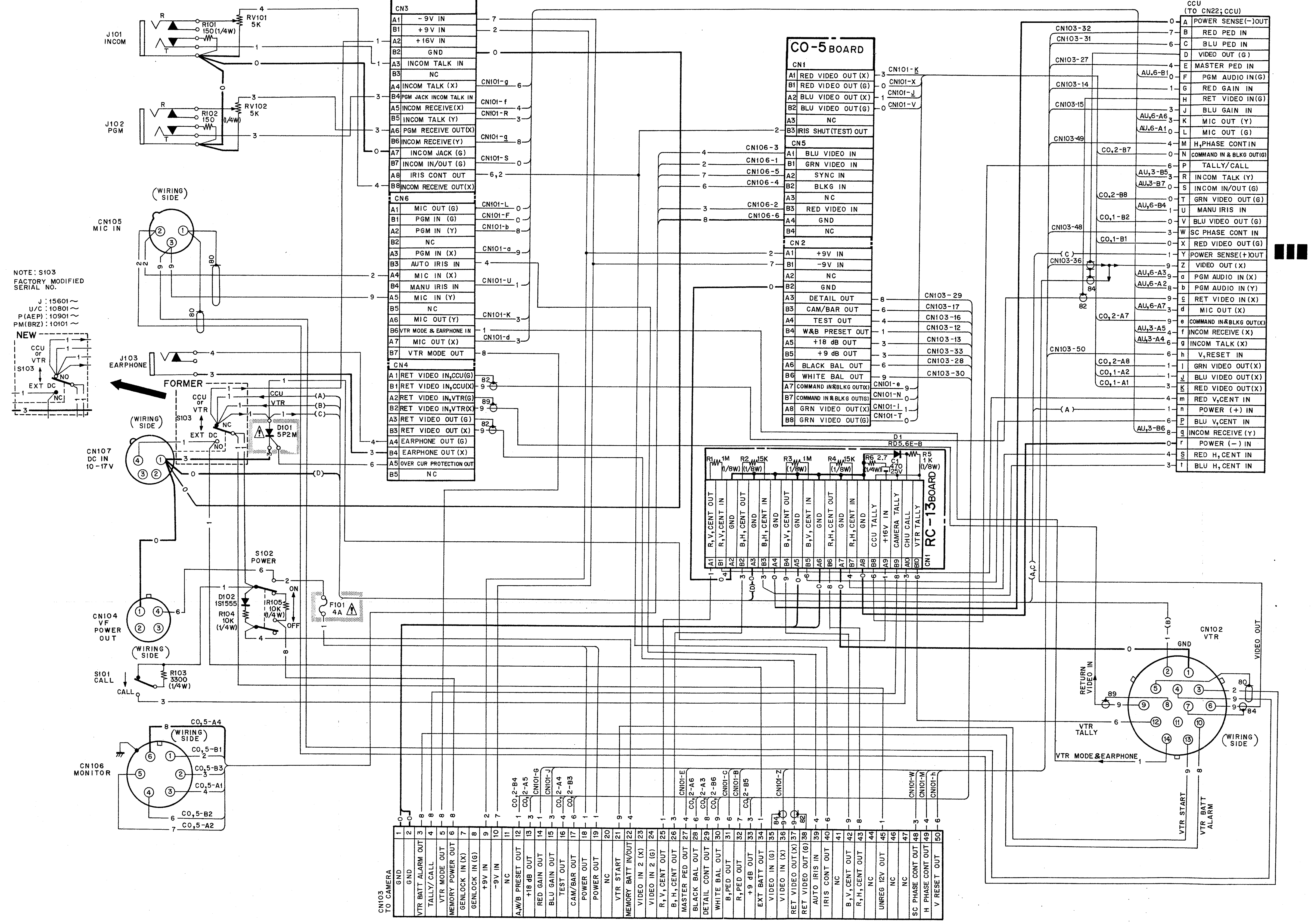

1
2
3
4 V−
V+ 8
7
6
5

CCU FRAME WIRING
CN-19 BOARD
FU-9/9A BOARD
LP-10 BOARD
SW-42 BOARD

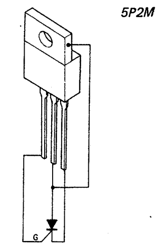

CN-19
PW-47
SG-31(U/C,J)
SG-31A(AEP)
SG-31B(BRZ)
VA-5
VA-6
AU-14
IF-29
FU-9(U/C,J,BRZ)
FU-9A(AEP)
SWITCHING REGULATOR
CN22 CAMERA
(WIRING SIDE)
CN21 WAVE FORM OUT
CN23 REMOTE
T2
T1
D1 BD703G, GRN POWER
Q1, Q2
RV3 5K R. PED
RV4 5K B. PED
RV5 5K R. GAIN
RV6 5K B. GAIN
RV7 5K R. V. CENT
RV8 5K B. H.CENT
RV9 5K B. V. CENT
RV10 5K R. H. CENT
CN8 PGM AUDIO IN
CN6 MIC OUT
CN9 TALLY/INCOM
CN10 VIDEO OUT VBS
CN11 GEN LOCK
CN12 RETURN VIDEO
CN13 VIDEO OUT VBS/V8
CN14
CN15
CN16 VIDEO OUT
CN17 VIDEO OUT
CN18 VIDEO OUT
CN19 MONITOR OUT
CN201
CN202
CN203
S9 POWER
CN20 AC IN
(U/C, AEP)
(J)
S11 POWER
CN7 DC IN
EXT DC
100V 120V
220V 240V

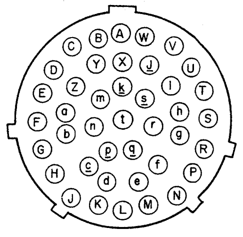

IF-29
SG-31(U/C,J)
SG-31A(AEP)
SG-31B(BRZ)
VA-5
VA-6
AU-14
LP-10
SW-42
FU-9(U/C,J,BRZ)
FU-9A(AEP)
SWITCHING REGULATOR
(UNREG +12V)
(REG +16V)
S1 MONITOR SELECT
S8 CABLE COMP SELECT
S9 POWER
S10 CALL
S11 POWER
S12 VOLTAGE SELECTOR
CN20 AC IN
CN7 DC IN
(WIRING SIDE)
J1 PGM
J2 INCOM
S2 INCOM
S3 MODE
S4 GAIN
S5 W&B BAL WHITE↔BLACK
S6 W&B BAL AUTO↔MANU
S7 IRIS
S1 DETAIL
D1 BD703G, GRN POWER
Q1,Q2 2SC403C
RV3 5K R. PED
RV4 5K B. PED
RV5 5K R. GAIN
RV6 5K B. GAIN
RV7 5K R.V. CENT
RV8 5K B.H. CENT
RV9 5K B.V. CENT
RV10 5K R.H. CENT
RV11 10K IRIS
RV12 10K MASTER PED
CN10 VIDEO OUT VBS
CN11 GEN LOCK
CN12 RETURN VIDEO
CN13 VIDEO OUT BS/VB
CN14
CN15
CN16 VIDEO OUT
CN17 VIDEO OUT
CN18 VIDEO OUT
CN19 MONITOR OUT

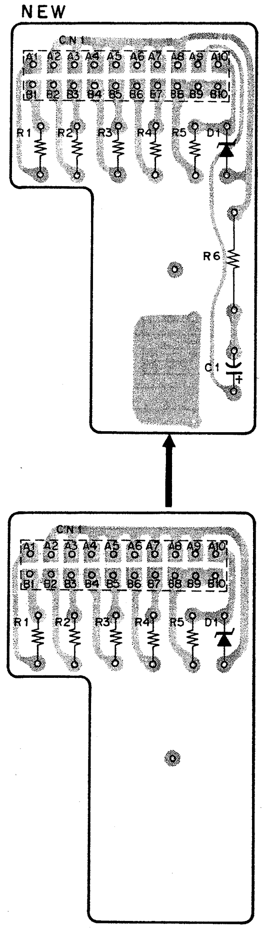
CCU ADAPTOR FRAME WIRING
RC-13 BOARD



J101 INCOM
J102 PGM
RV101 5K
RV102 5K
R101 150(1/4W)
R102 150 (1/4W)
CN105 MIC IN
(WIRING SIDE)
NOTE: S103 FACTORY MODIFIED SERIAL NO.
J : 15601~
U/C : 10801~
P(AEP) : 10901~
PM(BRZ) : 10101~
NEW
FORMER
CCU or VTR
S103
EXT DC
NO
NC
J103 EARPHONE
CN107 DC IN 10-17V
D101 5P2M
CN104 VF POWER OUT
S102 POWER
ON
OFF
D102 1S1555
R104 10K (1/4W)
IR105 10K (1/4W)
F101 4A
S101 CALL
R103 3300 (1/4W)
CALL
CN106 MONITOR
AU-15 BOARD
CN3
CN6
CN4
-9V IN
+9V IN
+16V IN
GND
INCOM TALK IN
NC
INCOM TALK (X)
PGM JACK INCOM TALK IN
INCOM RECEIVE(X)
INCOM TALK (Y)
PGM RECEIVE OUT(X)
INCOM RECEIVE(Y)
INCOM JACK (G)
INCOM IN/OUT (G)
IRIS CONT OUT
INCOM RECEIVE OUT(X)
MIC OUT (G)
PGM IN (G)
PGM IN (Y)
PGM IN (X)
AUTO IRIS IN
MIC IN (X)
MANU IRIS IN
MIC IN (Y)
MIC OUT (Y)
VTR MODE & EARPHONE IN
MIC OUT (X)
VTR MODE OUT
RET VIDEO IN,CCU(G)
RET VIDEO IN,CCU(X)
RET VIDEO IN,VTR(G)
RET VIDEO IN,VTR(X)
RET VIDEO OUT (G)
RET VIDEO OUT (X)
EARPHONE OUT (G)
EARPHONE OUT (X)
OVER CUR PROTECTION OUT
CO-5 BOARD
CN1
CN5
CN2
RED VIDEO OUT (X)
RED VIDEO OUT (G)
BLU VIDEO OUT (X)
BLU VIDEO OUT(G)
IRIS SHUT(TEST) OUT
BLU VIDEO IN
GRN VIDEO IN
SYNC IN
BLKG IN
RED VIDEO IN
+9V IN
-9V IN
DETAIL OUT
CAM/BAR OUT
TEST OUT
W&B PRESET OUT
+18 dB OUT
+9 dB OUT
BLACK BAL OUT
WHITE BAL OUT
COMMAND IN&BLKG OUT(X)
COMMAND IN&BLKG OUT(G)
GRN VIDEO OUT(X)
GRN VIDEO OUT(G)
RC-13 BOARD
R1 1M (1/8W)
R2 15K (1/8W)
R3 1M (1/8W)
R4 15K (1/8W)
R5 1K (1/8W)
R6 2.7 (1/4W)
C1 470 25V
D1 RD5.6E-B
R,V,CENT OUT
R,V,CENT IN
B,H,CENT OUT
B,H,CENT IN
B,V,CENT OUT
B,V,CENT IN
R,H,CENT OUT
R,H,CENT IN
CCU TALLY
+16V IN
CAMERA TALLY
CHU CALL
VTR TALLY
CN101 CCU (TO CN22; CCU)
POWER SENSE(-)OUT
RED PED IN
BLU PED IN
VIDEO OUT (G)
MASTER PED IN
PGM AUDIO IN(G)
RED GAIN IN
RET VIDEO IN(G)
BLU GAIN IN
MIC OUT (Y)
MIC OUT (G)
H,PHASE CONT IN
COMMAND IN & BLKG OUT(G)
TALLY/CALL
INCOM TALK (Y)
INCOM IN/OUT (G)
GRN VIDEO OUT (G)
MANU IRIS IN
BLU VIDEO OUT (G)
SC PHASE CONT IN
RED VIDEO OUT(G)
POWER SENSE(+)OUT
VIDEO OUT (X)
PGM AUDIO IN (X)
PGM AUDIO IN (Y)
RET VIDEO IN(X)
MIC OUT (X)
COMMAND IN&BLKG OUT(X)
INCOM RECEIVE (X)
INCOM TALK (X)
V,RESET IN
GRN VIDEO OUT(X)
BLU VIDEO OUT(X)
RED VIDEO OUT(X)
RED V,CENT IN
POWER (+) IN
BLU V,CENT IN
INCOM RECEIVE (Y)
POWER (-) IN
RED H,CENT IN
BLU H,CENT IN
CN102 VTR
GND
VIDEO OUT
RETURN VIDEO IN
VTR TALLY
VTR MODE & EARPHONE
VTR START
VTR BATT ALARM
CN103 TO CAMERA
GND
VTR BATT ALARM OUT
TALLY/CALL
VTR MODE OUT
MEMORY POWER OUT
GENLOCK IN (X)
GENLOCK IN (G)
+9V IN
-9V IN
NC
A.W/B PRESET OUT
+18 dB OUT
RED GAIN OUT
BLU GAIN OUT
TEST OUT
CAM/BAR OUT
POWER OUT
VTR START
MEMORY BATT IN/OUT
VIDEO IN 2 (X)
VIDEO IN 2 (G)
R,V,CENT OUT
B,H,CENT OUT
MASTER PED OUT
BLACK BAL OUT
DETAIL CONT OUT
WHITE BAL OUT
B,PED OUT
R,PED OUT
+9 dB OUT
EXT BATT OUT
VIDEO IN (G)
VIDEO IN (X)
RET VIDEO OUT(X)
RET VIDEO OUT (G)
AUTO IRIS IN
IRIS CONT OUT
B,V,CENT OUT
R,H,CENT OUT
UNREG 12V OUT
SC PHASE CONT OUT
H PHASE CONT OUT
V RESET OUT



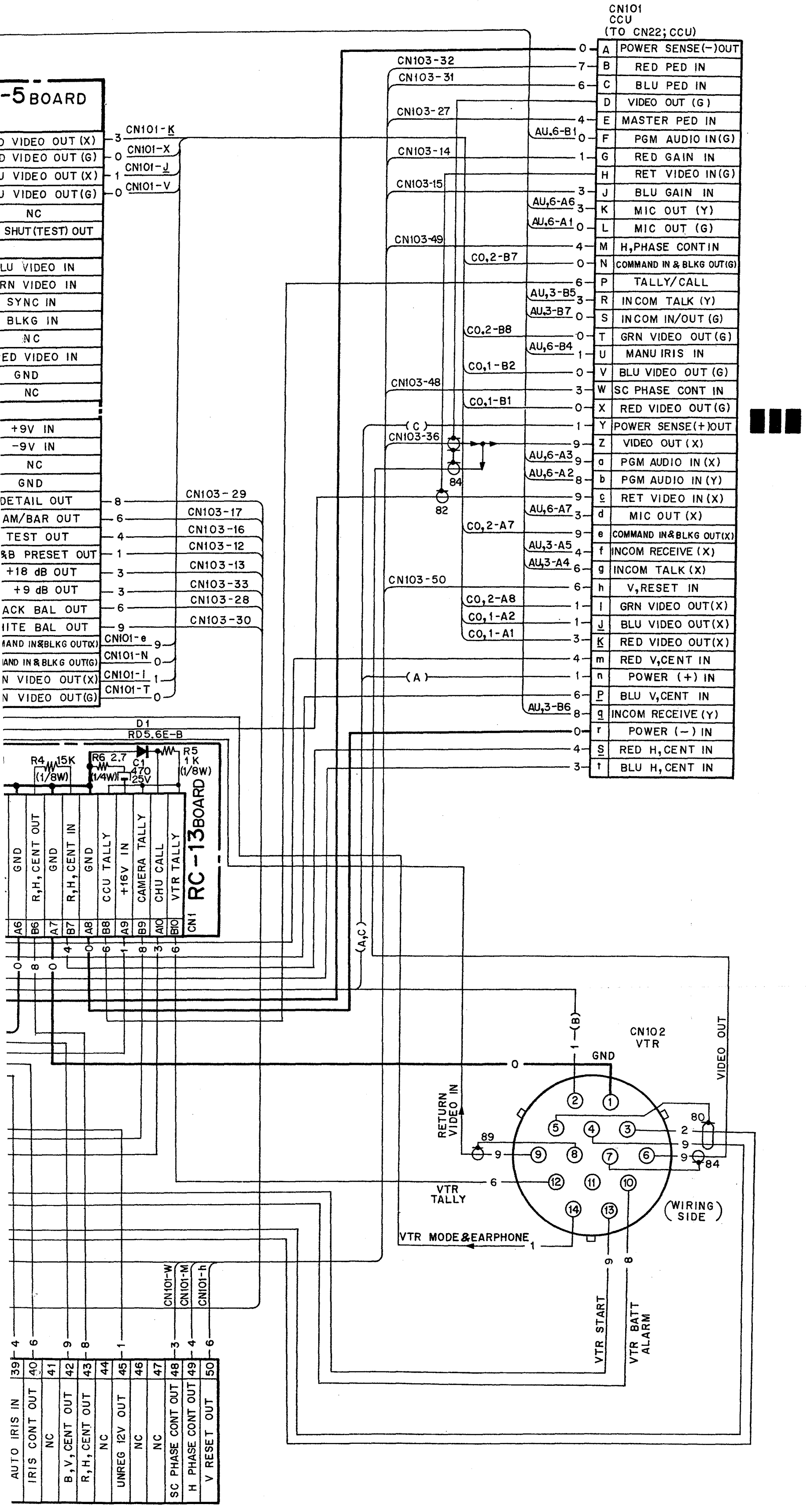

(WIRING SIDE)

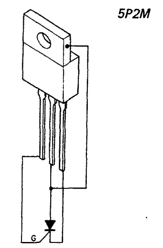


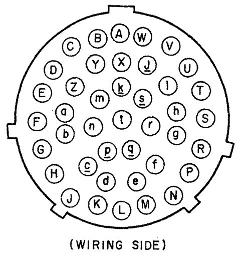
NEW
CN1
R1
R2
R3
R4
R5
D1
R6
C1

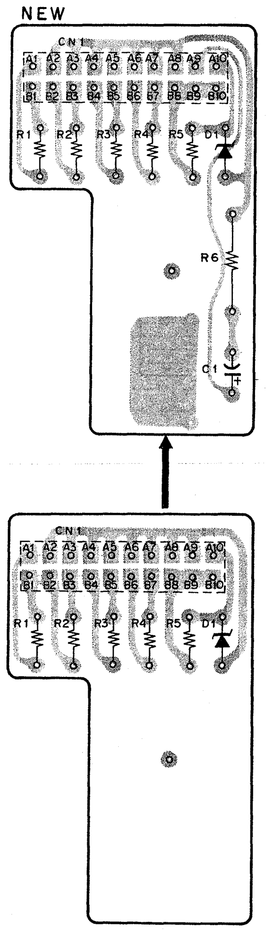
RC-13
- SOLDERING SIDE -

Ref. I
D21
D22
D23
D24
D25
D26
D27
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
NOT
1


CN101
CCU
(TO CN22; CCU)
A POWER SENSE(−)OUT
B RED PED IN
C BLU PED IN
D VIDEO OUT (G)
E MASTER PED IN
F PGM AUDIO IN(G)
G RED GAIN IN
H RET VIDEO IN(G)
J BLU GAIN IN
K MIC OUT (Y)
L MIC OUT (G)
M H,PHASE CONT IN
N COMMAND IN & BLKG OUT(G)
P TALLY/CALL
R INCOM TALK (Y)
S INCOM IN/OUT (G)
T GRN VIDEO OUT (G)
U MANU IRIS IN
V BLU VIDEO OUT (G)
W SC PHASE CONT IN
X RED VIDEO OUT (G)
Y POWER SENSE(+)OUT
Z VIDEO OUT (X)
a PGM AUDIO IN (X)
b PGM AUDIO IN (Y)
c RET VIDEO IN (X)
d MIC OUT (X)
e COMMAND IN & BLKG OUT(X)
f INCOM RECEIVE (X)
g INCOM TALK (X)
h V,RESET IN
i GRN VIDEO OUT(X)
j BLU VIDEO OUT(X)
k RED VIDEO OUT(X)
m RED V,CENT IN
n POWER (+) IN
p BLU V,CENT IN
q INCOM RECEIVE (Y)
r POWER (−) IN
s RED H,CENT IN
t BLU H,CENT IN
CN103-32
CN103-31
CN103-27
CN103-14
CN103-15
CN103-49
CN103-48
CN103-36
CN103-50
AU,6-B1
AU,6-A6
AU,6-A1
AU,3-B5
AU,3-B7
AU,6-B4
AU,6-A3
AU,6-A2
AU,6-A7
AU,3-A5
AU,3-A4
AU,3-B6
CO,2-B7
CO,2-B8
CO,1-B2
CO,1-B1
CO,2-A7
CO,2-A8
CO,1-A2
CO,1-A1
(C)
(A)
82
84
-5 BOARD
D VIDEO OUT (X)
D VIDEO OUT (G)
U VIDEO OUT (X)
U VIDEO OUT (G)
NC
SHUT(TEST) OUT
LU VIDEO IN
RN VIDEO IN
SYNC IN
BLKG IN
NC
ED VIDEO IN
GND
NC
+9V IN
−9V IN
NC
GND
DETAIL OUT
AM/BAR OUT
TEST OUT
&B PRESET OUT
+18 dB OUT
+9 dB OUT
ACK BAL OUT
IITE BAL OUT
IAND IN&BLKG OUT(X)
IAND IN & BLKG OUT(G)
N VIDEO OUT(X)
N VIDEO OUT(G)
CN101-K
CN101-X
CN101-J
CN101-V
CN103-29
CN103-17
CN103-16
CN103-12
CN103-13
CN103-33
CN103-28
CN103-30
CN101-e
CN101-N
CN101-I
CN101-T
D1
RD5.6E-B
R4 15K (1/8W)
R6 2.7 (1/4W)
C1 470 25V
R5 1K (1/8W)
RC-13 BOARD
CN1
GND
R,H,CENT OUT
GND
R,H,CENT IN
GND
CCU TALLY
+16V IN
CAMERA TALLY
CHU CALL
VTR TALLY
A6 B6 A7 B7 A8 B8 A9 B9 A10 B10
(A,C)
(B)
CN102
VTR
GND
VIDEO OUT
RETURN VIDEO IN
89
80
84
VTR TALLY
VTR MODE & EARPHONE
(WIRING SIDE)
VTR START
VTR BATT ALARM
CN101-W
CN101-M
CN101-h
39 40 41 42 43 44 45 46 47 48 49 50
AUTO IRIS IN
IRIS CONT OUT
NC
B,V,CENT OUT
R,H,CENT OUT
NC
UNREG 12V OUT
NC
NC
SC PHASE CONT OUT
H PHASE CONT OUT
V RESET OUT




(WIRING SIDE)


NEW
CN1
R1
R2
R3
R4
R5
D1
R6
C1

RC-13
- SOLDERING SIDE -

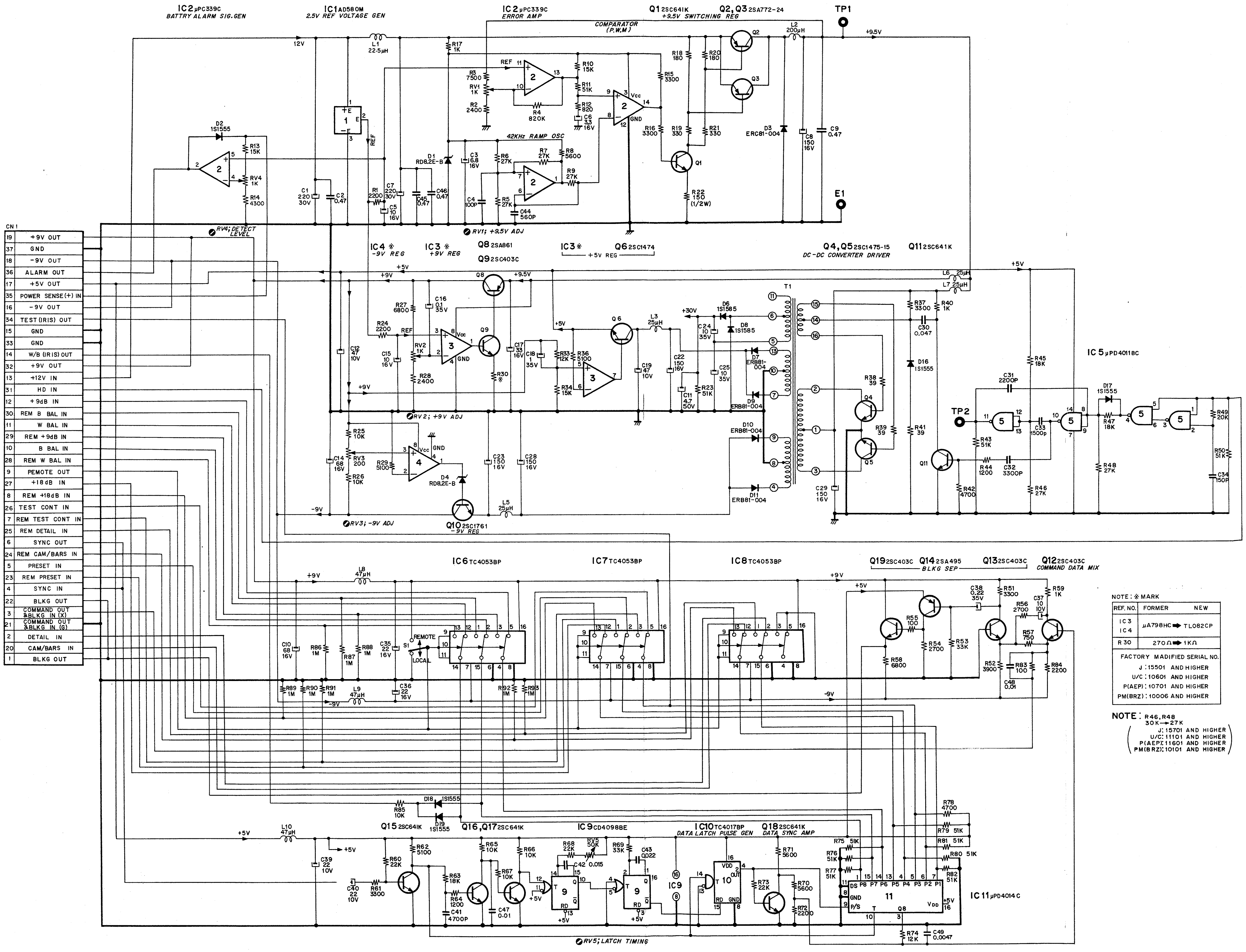
Ref. No.	Parts No.	Description
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D24	8-719-815-55	1S1555
D25	8-719-709-25	1S1925-P
D26	8-719-709-25	1S1925-P
D27	8-719-815-55	1S1555 (AEP)
IC1	8-759-131-10	μPC311C; NEC
IC2	8-759-940-98	CD4098BE, C-MOS; RCA
IC3	8-759-240-11	TC4011BP, C-MOS (CD4011BE; RCA)
IC4	8-759-131-10	μPC311C; NEC
IC5	8-759-931-40	CA3140AT; RCA
IC6	8-759-901-07	SN74LS107N, TTL; TI
IC7	8-759-901-07	SN74LS107N, TTL; TI
IC8	8-759-969-13	SN16913P; TI
IC9	8-759-990-82	TL082CP; TI
IC10	8-759-900-07	F4027PC, C-MOS; FSC
IC11	8-759-990-82	TL082CP; TI
IC12	8-756-131-10	μPC311C; NEC
IC13	8-759-940-98	CD4098BE, C-MOS; RCA
IC14	8-759-940-98	CD4098BE, C-MOS; RCA
IC15	8-759-240-11	TC4011BP, C-MOS (CD4011BE; RCA)
IC16	8-756-131-10	μPC311C; NEC
Q1	8-724-375-01	2SC403C (U/C, J)
	8-729-612-77	2SA1027R (AEP, BRZ)
Q2	8-724-375-01	2SC403C
Q3	8-724-375-01	2SC403C
Q4	8-724-375-01	2SC403C
Q5	8-724-375-01	2SC403C
Q6	8-729-663-47	2SC1364
Q7	8-724-375-01	2SC403C
Q8	8-729-612-77	2SA1027R
Q9	8-729-612-77	2SA1027R
Q10	8-729-663-47	2SC1364
Q11	8-729-612-77	2SA1027R
Q12	8-729-612-77	2SA1027R
Q13	8-729-612-77	2SA1027R
Q14	8-729-672-43	2SC2724

Ref. No.	Parts No.	Description
Q15	8-729-672-43	2SC2724
Q16	8-729-663-47	2SC1364
Q17	8-729-900-77	J176-V
Q18	8-729-612-77	2SA1027R
Q19	8-729-364-12	2SC641K
Q20	8-729-672-43	2SC2724
Q21	8-729-672-43	2SC2724
Q22	8-729-672-43	2SC2724
Q23	8-729-672-43	2SC2724
Q24	8-729-663-47	2SC1364
Q25	8-723-305-00	2SK43-5
Q26	8-724-375-01	2SC403C
Q27	8-724-375-01	2SC403C
Q28	8-729-663-47	2SC1364
Q29	8-724-375-01	2SC403C
Q30	8-729-612-77	2SA1027R
Q31	8-729-612-77	2SA1027R
Q32	8-729-663-47	2SC1364
Q33	8-729-612-77	2SA1027R
Q35	8-729-364-12	2SC641K
Q37	8-723-305-00	2SK43-5
Q38	8-723-305-00	2SK43-5
Q39	8-724-375-01	2SC403C
R11	1-214-565-00	METAL 2.2K 1% 1/8W
R36	1-214-563-00	METAL 1800 1% 1/8W
R40	1-214-172-00	METAL 47K 1% 1/4W
R63	1-214-566-00	METAL 2.4K 1% 1/8W
R64	1-214-565-00	METAL 2.2K 1% 1/8W
R66	1-214-565-00	METAL 2.2K 1% 1/8W (U/C, J, BRZ)
	1-214-560-00	METAL 1.3K 1% 1/8W (AEP)
R74	1-214-581-00	METAL 10K 1% 1/8W
R85	1-214-582-00	METAL 11K 1% 1/8W
R86	1-214-582-00	METAL 11K 1% 1/8W
R87	1-214-582-00	METAL 11K 1% 1/8W
R88	1-214-589-00	METAL 22K 1% 1/8W
R89	1-214-589-00	METAL 22K 1% 1/8W
R101	1-214-552-00	METAL 620 1% 1/8W
R120	1-214-175-00	METAL 62K 1% 1/4W
R121	1-214-175-00	METAL 62K 1% 1/4W
R122	1-214-575-00	METAL 5.6K 1% 1/8W
R127	1-214-593-00	METAL 33K 1% 1/8W
R128	1-214-565-00	METAL 2.2K 1% 1/8W
R136	1-214-584-00	METAL 13K 1% 1/8W

NOTE:

1. **The shaded and ⚠-marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

PW-47 BOARD (POWER SUPPLY AND CAMERA CONTROL SYSTEM 1)


IC2 μPC339C BATTRY ALARM SIG.GEN
IC1 AD580M 2.5V REF VOLTAGE GEN
IC2 μPC339C ERROR AMP
COMPARATOR (P.W.M)
Q1 2SC641K +9.5V SWITCHING REG
Q2, Q3 2SA772-24
TP1
+9.5V
E1
42KHz RAMP OSC
RV1; +9.5V ADJ
RV4; DETECT LEVEL
IC4 ※ -9V REG
IC3 ※ +9V REG
Q8 2SA861
Q9 2SC403C
IC3 ※ +5V REG
Q6 2SC1474
Q4, Q5 2SC1475-15 DC-DC CONVERTER DRIVER
Q11 2SC641K
IC5 μPD4011BC
TP2
T1
RV2; +9V ADJ
RV3; -9V ADJ
Q10 2SC1761 -9V REG
IC6 TC4053BP
IC7 TC4053BP
IC8 TC4053BP
Q19 2SC403C
Q14 2SA495 BLKG SEP
Q13 2SC403C
Q12 2SC403C COMMAND DATA MIX
REMOTE
LOCAL
S1
Q15 2SC641K
Q16, Q17 2SC641K
IC9 CD4098BE
IC10 TC4017BP DATA LATCH PULSE GEN
Q18 2SC641K DATA SYNC AMP
IC11 μPD4014C
RV5; LATCH TIMING
CN1
19 +9V OUT
37 GND
18 -9V OUT
36 ALARM OUT
17 +5V OUT
35 POWER SENSE(+) IN
16 -9V OUT
34 TEST (IRIS) OUT
15 GND
33 GND
14 W/B (IRIS) OUT
32 +9V OUT
13 +12V IN
31 HD IN
12 +9dB IN
30 REM B BAL IN
11 W BAL IN
29 REM +9dB IN
10 B BAL IN
28 REM W BAL IN
9 PEMOTE OUT
27 +18dB IN
8 REM +18dB IN
26 TEST CONT IN
7 REM TEST CONT IN
25 REM DETAIL IN
6 SYNC OUT
24 REM CAM/BARS IN
5 PRESET IN
23 REM PRESET IN
4 SYNC IN
22 BLKG OUT
3 COMMAND OUT &BLKG IN (X)
21 COMMAND OUT &BLKG IN (G)
2 DETAIL IN
20 CAM/BARS IN
1 BLKG OUT

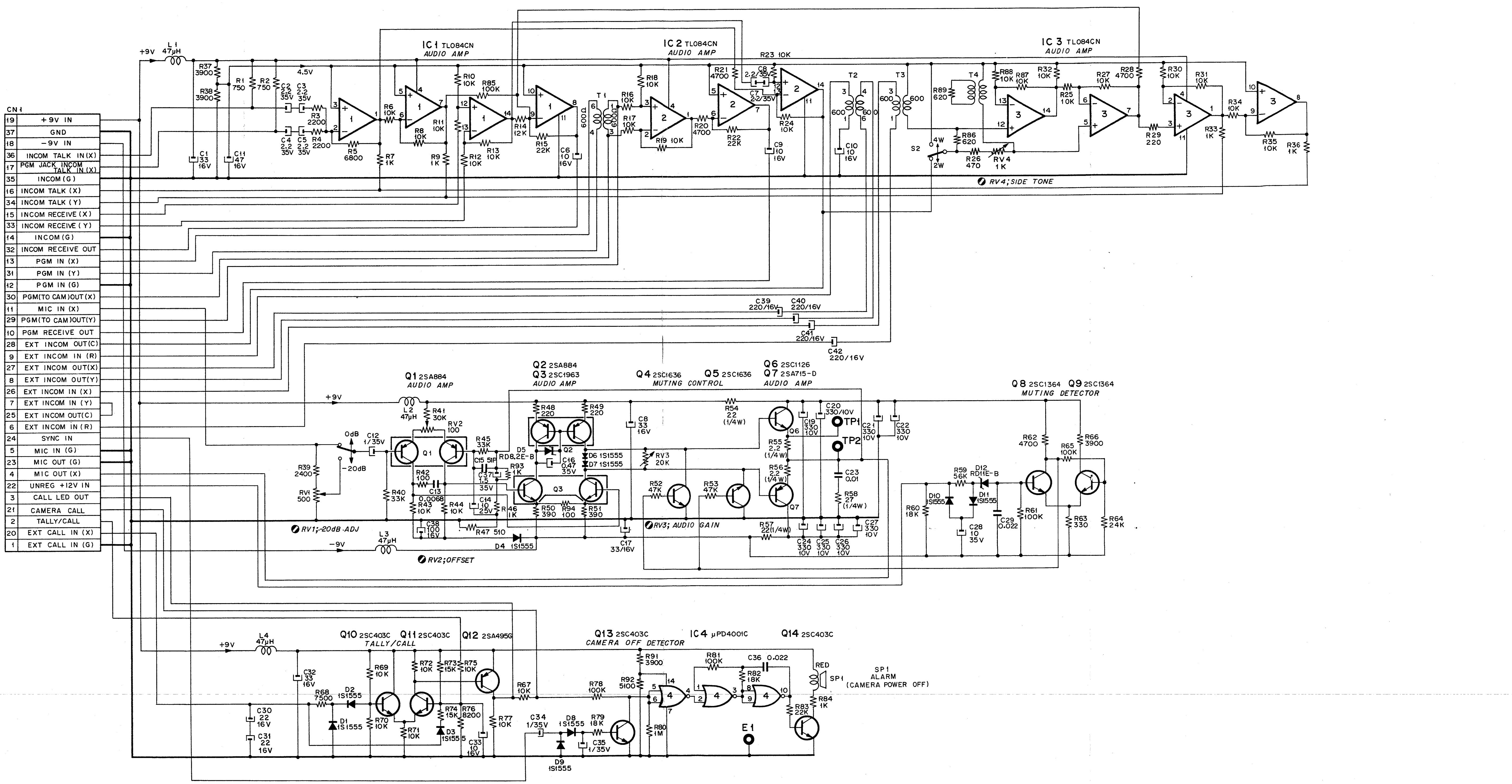
NOTE : ※ MARK

REF. NO.	FORMER NEW
IC3 IC4	μA798HC ➡ TL082CP
R 30	270Ω ➡ 1KΩ

FACTORY MADIFIED SERIAL NO.
J : 15501 AND HIGHER
U/C : 10601 AND HIGHER
P(AEP) : 10701 AND HIGHER
PM(BRZ) : 10006 AND HIGHER

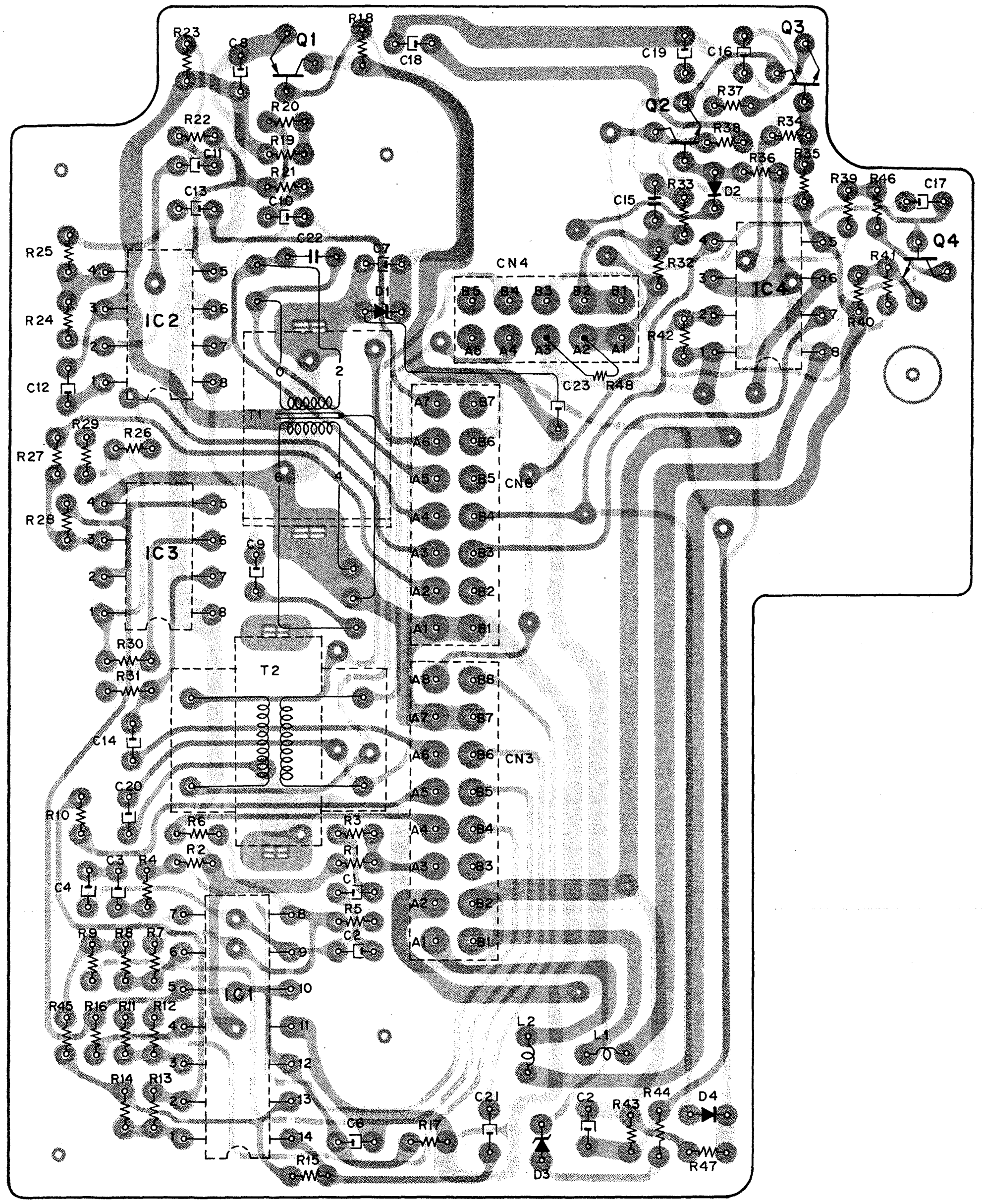
NOTE : R46, R48
30K → 27K
(J: 15701 AND HIGHER
U/C: 11101 AND HIGHER
P(AEP): 11601 AND HIGHER
PM(BRZ): 10101 AND HIGHER)

AU-14 BOARD (AUDIO SYSTEM)

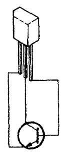

CN1
19 +9V IN
37 GND
18 -9V IN
36 INCOM TALK IN(X)
17 PGM JACK INCOM TALK IN(X)
35 INCOM(G)
16 INCOM TALK (X)
34 INCOM TALK (Y)
15 INCOM RECEIVE (X)
33 INCOM RECEIVE (Y)
14 INCOM (G)
32 INCOM RECEIVE OUT
13 PGM IN (X)
31 PGM IN (Y)
12 PGM IN (G)
30 PGM(TO CAM)OUT(X)
11 MIC IN (X)
29 PGM(TO CAM)OUT(Y)
10 PGM RECEIVE OUT
28 EXT INCOM OUT(C)
9 EXT INCOM IN (R)
27 EXT INCOM OUT(X)
8 EXT INCOM OUT(Y)
26 EXT INCOM IN (X)
7 EXT INCOM IN (Y)
25 EXT INCOM OUT(C)
6 EXT INCOM IN (R)
24 SYNC IN
5 MIC IN (G)
23 MIC OUT (G)
4 MIC OUT (X)
22 UNREG +12V IN
3 CALL LED OUT
21 CAMERA CALL
2 TALLY/CALL
20 EXT CALL IN (X)
1 EXT CALL IN (G)
+9V
L1 47μH
IC1 TL084CN AUDIO AMP
IC2 TL084CN AUDIO AMP
IC3 TL084CN AUDIO AMP
R23 10K
T1
T2
T3
T4
S2
4W
2W
RV4 1K
RV4; SIDE TONE
C39 220/16V
C40 220/16V
C41 220/16V
C42 220/16V
Q1 2SA884 AUDIO AMP
Q2 2SA884
Q3 2SC1963 AUDIO AMP
Q4 2SC1636
Q5 2SC1636 MUTING CONTROL
Q6 2SC1126
Q7 2SA715-D AUDIO AMP
Q8 2SC1364 Q9 2SC1364 MUTING DETECTOR
0dB
-20dB
RV1; -20dB ADJ
RV2; OFFSET
RV3; AUDIO GAIN
L2 47μH
L3 47μH
-9V
TP1
TP2
D4 1S1555
D5 RD8.2E-B
D6 1S1555
D7 1S1555
D12 RD11E-B
Q10 2SC403C Q11 2SC403C TALLY/CALL
Q12 2SA495G
Q13 2SC403C CAMERA OFF DETECTOR
IC4 μPD4001C
Q14 2SC403C
L4 47μH
RED
SP1 ALARM (CAMERA POWER OFF)
E1

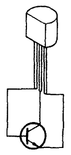
NOTE: R74 7500→15K
(J: 15801 AND HIGHER
U/C: 11111 AND HIGHER
P(AEP): 11701 AND HIGHER
PM(BRZ): 10101 AND HIGHER)

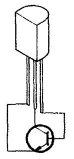
AU-15 BOARD (AUDIO SYSTEM)

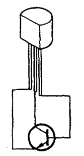

R23
C8
Q1
R18
C18
C19
C16
Q3
Q2
R37
R38
R34
R36
R35
R22
C11
R20
R19
R21
C10
C13
C15
R33
D2
R39
R46
C17
Q4
R41
R40
R25
C22
C7
D1
CN4
R32
IC4
IC2
R24
R42
C23
R48
C12
T1
R29
R26
R27
CN6
R28
IC3
C9
R30
R31
T2
C14
CN3
C20
R10
R6
R3
R2
R1
C3
R4
C1
C4
R5
C2
R9
R8
R7
IC1
R45
R16
R11
R12
L2
L1
R14
R13
C21
C2
R44
D4
R43
C6
R17
R15
D3
R47

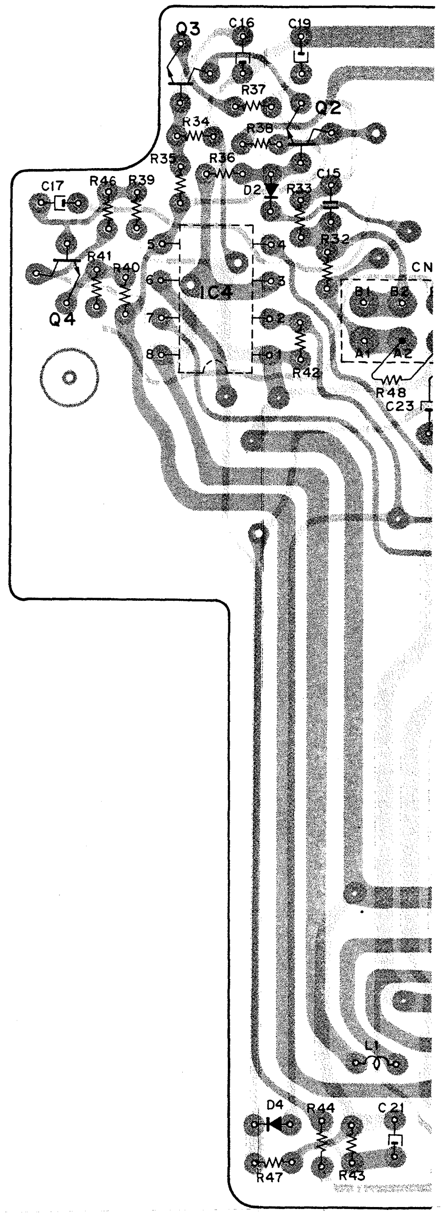
AU-15 -SOLDERING SIDE-

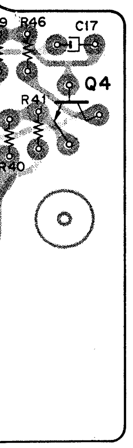


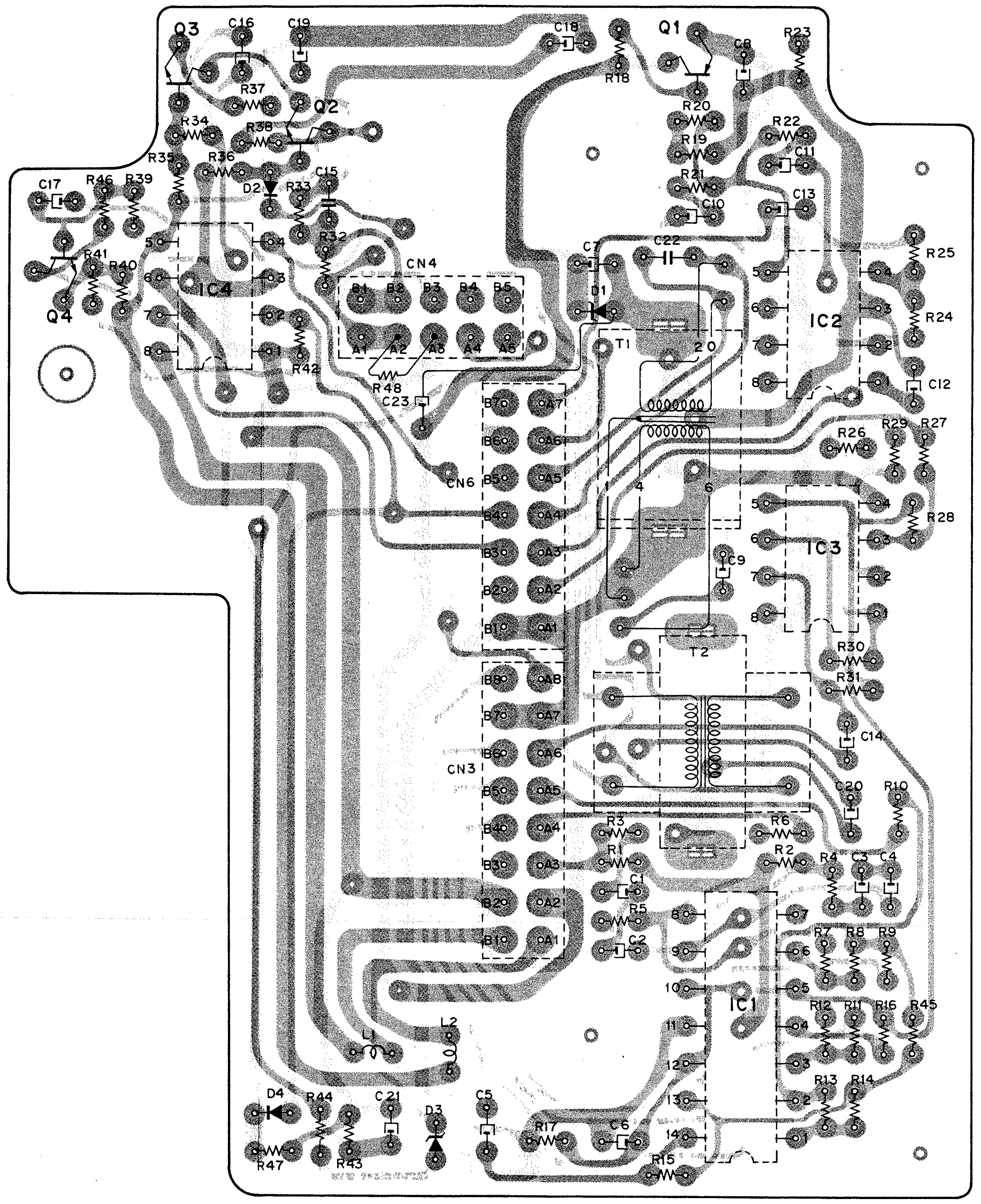

2SC710
2SC1209





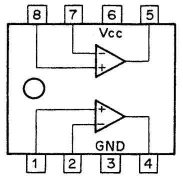

Q3
C16
C19
R37
Q2
R34
R38
R35
R36
C17
R46
R39
D2
R33
C15
R41
R40
R32
Q4
IC4
R42
R48
C23
L1
D4
R44
C21
R47
R43


R46
C17
Q4
R41
R40

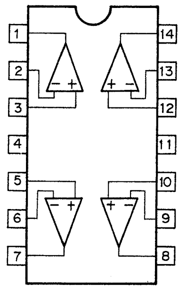

Q3
C16
C19
C18
Q1
C8
R23
R37
Q2
R18
R20
R22
R34
R38
R19
R35
R36
C11
C17
R46
R39
D2
R33
C15
R21
C10
C13
R32
R25
R41
IC4
CN4
C7
C22
R40
D1
IC2
R24
Q4
R42
T1
C12
R48
C23
CN6
R26
R29
R27
R28
IC3
C9
T2
R30
R31
CN3
C14
C20
R10
R3
R6
R1
R2
R4
C3
C4
C1
R5
C2
R7
R8
R9
IC1
R12
R11
R16
R45
L1
L2
R13
R14
D4
R44
C21
C5
D3
R17
C6
R47
R43
R15

AU - 15 - COMPONENT SIDE-

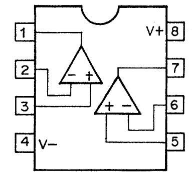
LM387N (NSC)
LOW NOISE AMPLIFIER
—TOP VIEW—


8
7
6
5
Vcc
GND
1
2
3
4

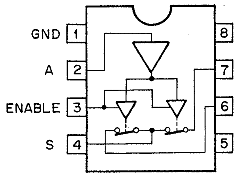
TL084CN
OPERATIONAL AMPLIFIER
(J FET-INPUT)
—TOP VIEW—

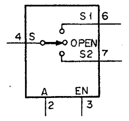

1
2
3
4
5
6
7
14
13
12
11
10
9
8

TL072CP (TI)
TL072ACP (TI)
TL072BCP (TI)
OPERATIONAL AMPLIFIER
(LOW-NOISE, JFET-INPUT)
—TOP VIEW—


1
2
3
4
V−
V+
8
7
6
5

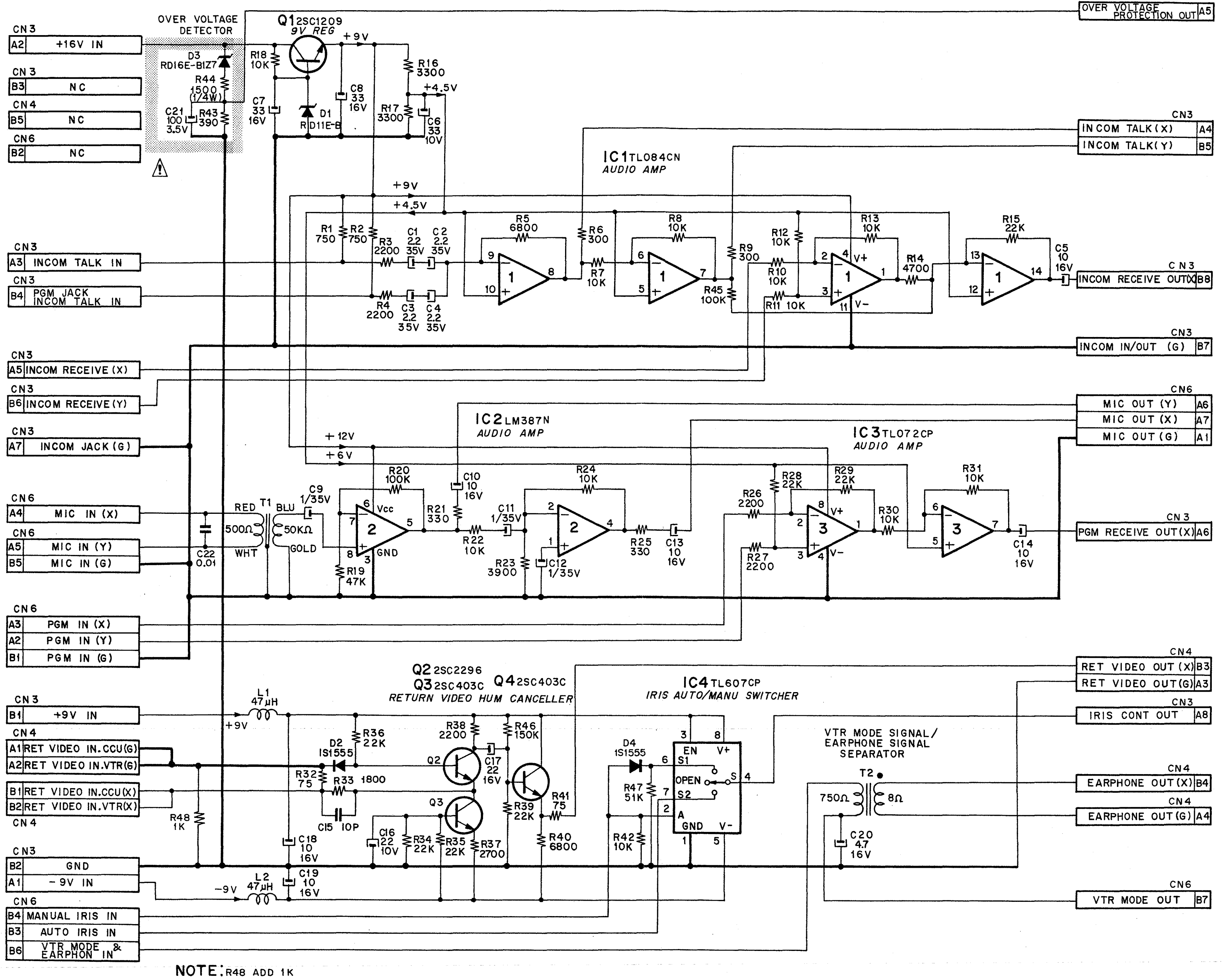
TL607CP (TI) SN72607P (TI)
MOS ANALOG SWITCH
—TOP VIEW—


GND 1
A 2
ENABLE 3
S 4
8 V+
7 S2
6 S1
5 V−


S1 6
4 S
OPEN
S2 7
A
EN
2
3

INPUTS		SW₁
A	EN	
X	L	OPEN
L	H	6 7
H	H	6 7

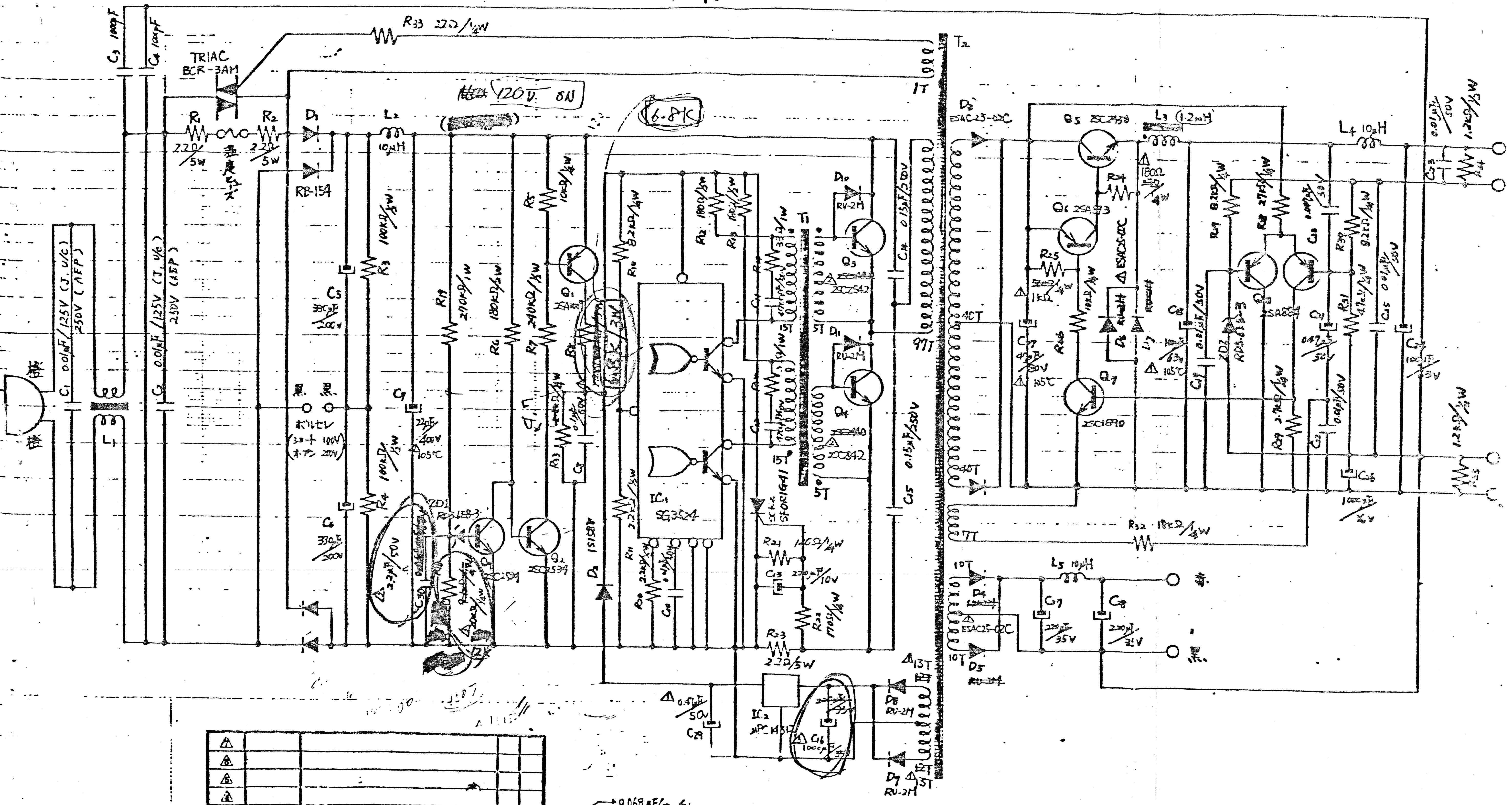
AU-15 BOARD (AUDIO SYSTEM)


CN3 A2 +16V IN
CN3 B3 NC
CN4 B5 NC
CN6 B2 NC
OVER VOLTAGE DETECTOR
D3 RD16E-B1Z7
R44 1500 (1/4W)
C21 100 3.5V
R43 390
Q1 2SC1209 9V REG
R18 10K
C7 33 16V
D1 RD11E-B
C8 33 16V
R16 3300
R17 3300
C6 33 10V
+9V
+4.5V
CN4 OVER VOLTAGE PROTECTION OUT A5
CN3 INCOM TALK (X) A4
INCOM TALK (Y) B5
IC1 TL084CN AUDIO AMP
R1 750
R2 750
R3 2200
C1 2.2 35V
C2 2.2 35V
R4 2200
C3 2.2 35V
C4 2.2 35V
R5 6800
R6 300
R7 10K
R8 10K
R9 300
R45 100K
R12 10K
R10 10K
R11 10K
R13 10K
R14 4700
R15 22K
C5 10 16V
V+
V-
CN3 A3 INCOM TALK IN
CN3 B4 PGM JACK INCOM TALK IN
CN3 INCOM RECEIVE OUT(X) B8
CN3 INCOM IN/OUT (G) B7
CN3 A5 INCOM RECEIVE (X)
CN3 B6 INCOM RECEIVE (Y)
CN3 A7 INCOM JACK (G)
CN6 MIC OUT (Y) A6
MIC OUT (X) A7
MIC OUT (G) A1
IC2 LM387N AUDIO AMP
IC3 TL072CP AUDIO AMP
+12V
+6V
CN6 A4 MIC IN (X)
CN6 A5 MIC IN (Y)
B5 MIC IN (G)
C22 0.01
T1 RED BLU WHT GOLD 500Ω 50KΩ
C9 1/35V
R20 100K
Vcc
GND
R19 47K
C10 10 16V
R21 330
R22 10K
C11 1/35V
R23 3900
C12 1/35V
R24 10K
R25 330
C13 10 16V
R26 2200
R27 2200
R28 22K
R29 22K
R30 10K
R31 10K
C14 10 16V
CN3 PGM RECEIVE OUT(X) A6
CN6 A3 PGM IN (X)
A2 PGM IN (Y)
B1 PGM IN (G)
Q2 2SC2296
Q3 2SC403C
Q4 2SC403C
RETURN VIDEO HUM CANCELLER
IC4 TL607CP IRIS AUTO/MANU SWITCHER
CN4 RET VIDEO OUT (X) B3
RET VIDEO OUT (G) A3
CN3 IRIS CONT OUT A8
CN3 B1 +9V IN
CN4 A1 RET VIDEO IN.CCU(G)
A2 RET VIDEO IN.VTR(G)
B1 RET VIDEO IN.CCU(X)
B2 RET VIDEO IN.VTR(X)
CN4
L1 47μH
+9V
R36 22K
D2 1S1555
R32 75
R33 1800
C15 10P
R48 1K
C18 10 16V
R38 2200
C17 22 16V
R46 150K
R39 22K
R41 75
R40 6800
C16 22 10V
R34 22K
R35 22K
R37 2700
D4 1S1555
R47 51K
R42 10K
EN V+ S1 OPEN S2 A GND V- S
VTR MODE SIGNAL/ EARPHONE SIGNAL SEPARATOR
T2 750Ω 8Ω
C20 4.7 16V
CN4 EARPHONE OUT (X) B4
CN4 EARPHONE OUT (G) A4
CN3 B2 GND
A1 -9V IN
L2 47μH -9V
C19 10 16V
CN6 VTR MODE OUT B7
CN6 B4 MANUAL IRIS IN
B3 AUTO IRIS IN
B6 VTR MODE & EARPHON IN

NOTE: R48 ADD 1K
J: 15701 AND HIGHER
U/C: 11001 AND HIGHER
P(AEP): 11501 AND HIGHER
PM(BRZ): 10101 AND HIGHER

The shaded and ⚠-marked components are critical to safety.
Replace only with same component as specified.

SW REG 回路図


R33 22Ω/¼W
T2
TRIAC
BCR-3AM
C3 1000pF
C4 1000pF
1T
120V ON
6.8K
R1 22Ω/5W
温度ヒューズ
R2 22Ω/5W
D1
RB-154
L2 10μH
C1 0.01μF/125V (J, U/C) 250V (AEP)
C2 0.01μF/125V (J, U/C) 250V (AEP)
L1
C5 330μF/200V
C6 330μF/200V
R3 100kΩ/½W
R4 180kΩ/½W
C9 22μF/400V 105°C
黒 黒
ボルセレ
(ショート 100V オープン 200V)
R19 270kΩ/1W
R6 180kΩ/½W
R7 240kΩ/½W
R5 10kΩ/½W
Q1 2SA1001
R8
R13
C8
ZD1
Q2 2SC2534
D2 1S1588
D3 1S1588
R10 8.2kΩ/½W
R11 2.2kΩ/½W
R20 2.2kΩ
C10 0.01μF
IC1 SG3524
R12 180Ω/½W
R13 180Ω/½W
C11
C12
T1
15T
5T
Q3 2SC2542
Q4 2SC2542
D10 RU-2M
D11 RU-2M
C14 0.15μF/250V
C15 0.15μF/250V
97T
SF0R1G41
R21 120Ω/½W
C13 220μF/10V
R22 170Ω/½W
R23 22Ω/5W
C29 0.47μF/50V
IC2 μPC14312
C16 1000μF/35V
D8 RU-2M
D9 RU-2M
13T
12T
D3 ESAC25-02C
40T
Q5 2SC2450
L3 1.2mH
R24 180Ω ¼W
Q6 2SA933
R25 1kΩ ¼W
ESAC25-02C
R26 10kΩ/¼W
C17 47μF/50V 105°C
D6
D7
ZD2 RD5.6EB3
Q8 2SA864
Q7 2SC1890
C18
C19 0.01μF/50V
L4 10μH
C33 0.01μF/50V
R34 1.2kΩ/½W
R29 8.2kΩ/¼W
R28 27kΩ/¼W
R30 8.2kΩ/¼W
R31 47kΩ/¼W
C25 0.01μF/50V
C27 100μF/63V
R39 2.7kΩ/¼W
C22 0.01μF/50V
IC26 1000μF/16V
R35 1.2kΩ/½W
R32 18kΩ/½W
7T
10T
D4 ESAC25-02C
D5
L5 10μH
C7 220μF/35V
C8 220μF/35V
赤
黒

符号	変更年月日	訂正記事	印	
△7				
△6				
△5				
△4				
△3	55.2.16	R8, C30, C16 変更	[illegible]	
△2	54.12.26	2SC2440→2SC2542 このLOTを 03とする	[illegible]	
△1	54.12.9	定数変更 このLOT を 01A とする	[illegible]	

図面変更の場合，前記図面は御返却下さい

図番 NP91105T1－△2

→ 0.068μF/50V 追加 C30

R8
47kΩ 3W → 2.2kΩ 3W
D6, D7
RU-2M → ESAC25-02C
D4, D5
RU-2M → ESAC25-02C
C7, C17, C8
22μF/400V
47μF/50V
100μF/63V } 85°C → 105°C
→ 13T ×2

R4, R5
27Ω → 180Ω
560Ω → 1kΩ

CCU-300 (LOT 01)

J.U/C---1-413-C47-11
AEP ---1-413-C47-21

NP91105T1－△3

SECTION 5
SPARE PARTS

5-1. PARTS INFORMATION

1. **Safety Related Component Warning**

   Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service bulletins and service manual supplements published by Sony.

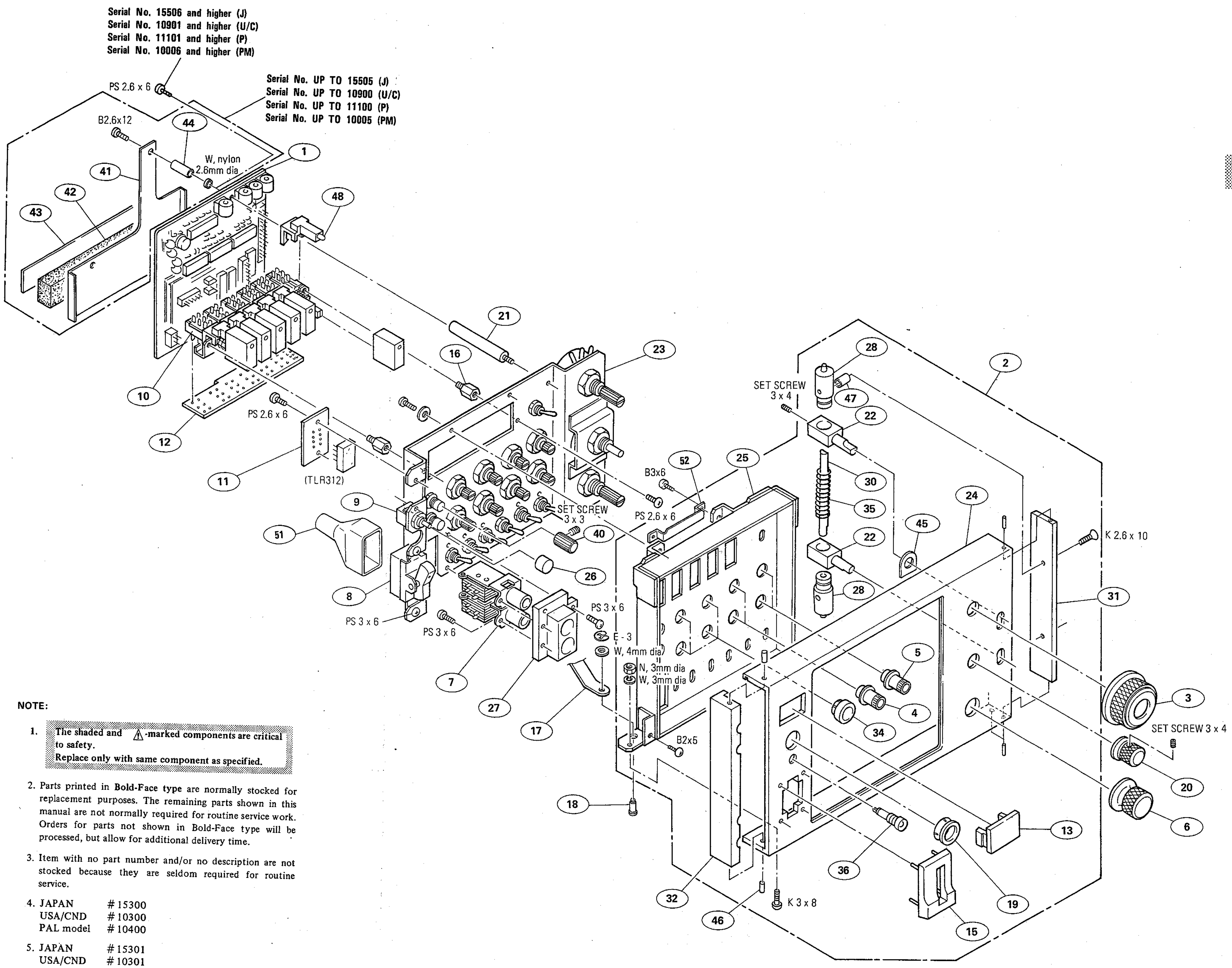
2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."
   - This manul's exploded views and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering dapartment, refer Sony service bulletins and service manual supplements.

3. **Printed Components in Bold-Face type** on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

4. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

5-2. EXPLODED VIEW

Front Panel Block


Serial No. 15506 and higher (J)
Serial No. 10901 and higher (U/C)
Serial No. 11101 and higher (P)
Serial No. 10006 and higher (PM)
Serial No. UP TO 15505 (J)
Serial No. UP TO 10900 (U/C)
Serial No. UP TO 11100 (P)
Serial No. UP TO 10005 (PM)
PS 2.6 x 6
B2.6x12
W, nylon 2.6mm dia
(TLR312)
SET SCREW 3 x 4
B3x6
SET SCREW 3 x 3
PS 2.6 x 6
PS 3 x 6
E-3
W, 4mm dia
N, 3mm dia
W, 3mm dia
B2x5
K 2.6 x 10
SET SCREW 3 x 4
K 3 x 8
1
2
3
4
5
6
7
8
9
10
11
12
13
15
16
17
18
19
20
21
22
23
24
25
26
27
28
30
31
32
34
35
36
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41
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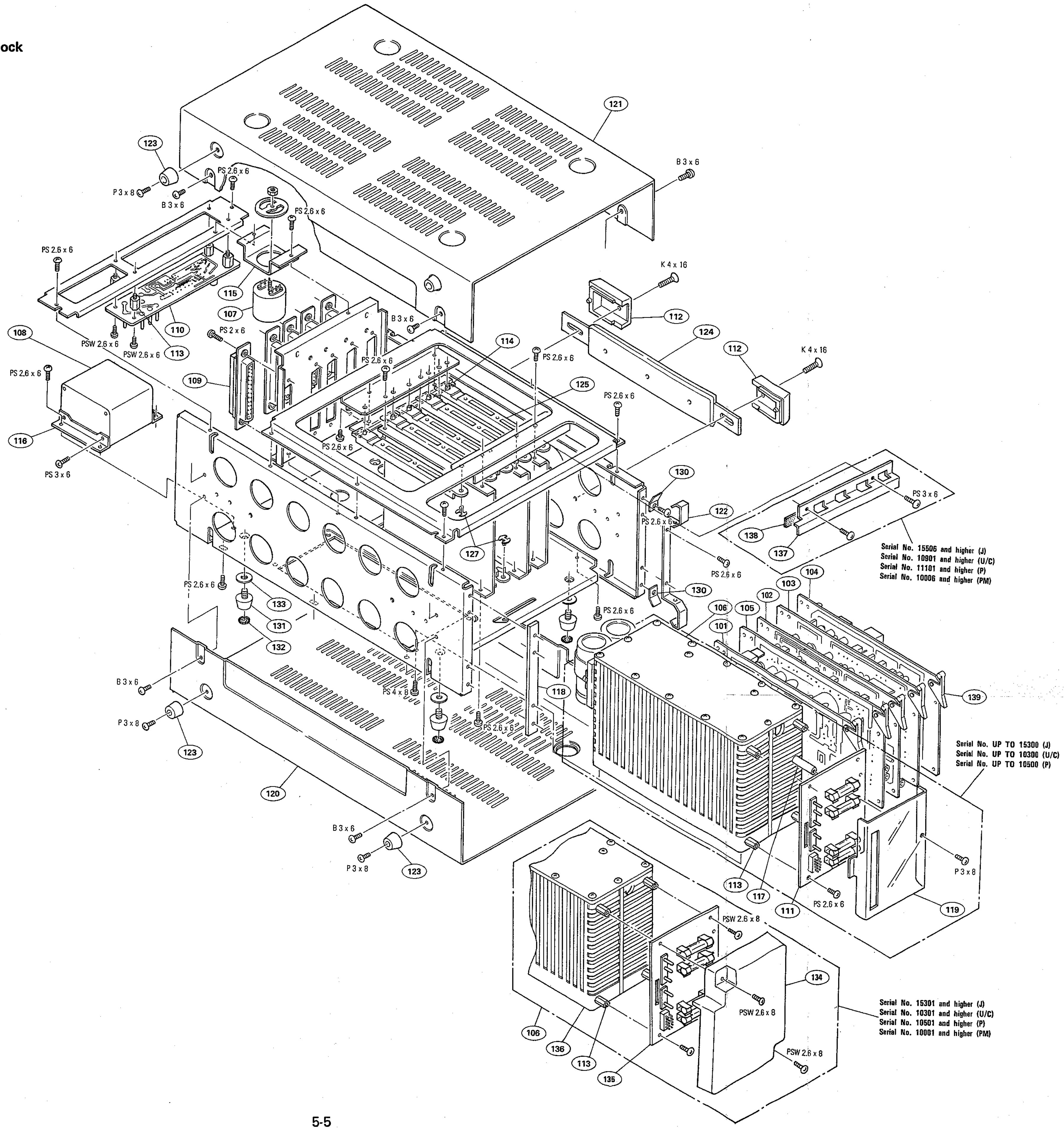
43
44
45
46
47
48
51
52

NOTE:

1. The shaded and ⚠-marked components are critical to safety. Replace only with same component as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.
4. JAPAN #15300
   USA/CND #10300
   PAL model #10400
5. JAPAN #15301
   USA/CND #10301
   PAL model #10401
   PM model #10001

No.	Part No.	Description
1	A-7511-447-A	MOUNTED CIRCUIT BOARD, "IF-29"
2	A-7612-126-A	FRONT ASS'Y
3	**X-2270-601-0**	**KNOB ASS'Y**
4	**X-2270-602-0**	**KNOB ASS'Y (R), MIXING**
5	**X-2270-603-0**	**KNOB ASS'Y (B), MIXING**
6	**X-3651-342-0**	**KNOB ASS'Y, CONTROL**
7	**1-507-676-00**	**JACK, PHONE**
⚠ **8**	**1-516-379-00**	**SWITCH, ROCKER (S9)**
9	**1-552-200-00**	**SWITCH, PUSH**
10	**1-553-251-00**	**SWITCH, PUSH (S1)**
11	1-602-105-00	PRINTED CIRCUIT BOARD, "LP-10"
12	1-602-106-00	PRINTED CIRCUIT BOARD, "SW-42"
13	2-286-715-00	WINDOW, tally
15	**2-251-642-00**	**GUARD, POWER SWITCH**
16	2-270-601-00	SUPPORT
17	2-270-603-00	STAY
18	2-270-604-00	SHAFT
19	**2-270-607-00**	**RING, GUARD**
20	**2-270-608-00**	**KNOB, C**
21	2-270-610-00	SUPPORT, PC BOARD
22	2-270-613-00	LEVER
23	2-270-638-00	BRACKET (SERIAL No. UP TO NOTE 4)
	2-270-638-03	BRACKET (SERIAL No. NOTE 5 AND HIGHER)
24	2-270-639-00	PANEL, FRONT
25	2-270-640-00	PANEL, ORNAMENTAL (SERIAL No. UP TO NOTE 4)
	2-270-640-03	PANEL, ORNAMENTAL (SERIAL No. NOTE 5 AND HIGHER)
26	**2-270-646-00**	**BUTTON, SWITCH**
27	2-270-650-00	INSULATOR
28	2-270-651-00	SHAFT, STOPPER
30	2-270-653-00	BEARING
31	2-270-654-00	PANEL, SIDE
32	2-270-656-00	HINGE
34	**2-270-658-00**	**WASHER, ORNAMENTAL, CONTROL (SERIAL No. UP TO NOTE 4)**
	2-270-658-02	**WASHER, ORNAMENTAL, CONTROL (SERIAL No. NOTE 5 AND HIGHER)**
35	3-819-914-00	SPRING, COMPRESSION
36	**8-719-907-03**	**BD703G**
40	**2-270-649-00**	**KNOB, A**
41	2-270-690-00	PLATE (1), PCB HOLDER
42	2-270-692-00	CUSHION, HOLDER
43	2-270-695-00	PLATE, HOLDER
44	3-661-830-00	SPACER
45	2-275-605-00	PLATE, BLIND
46	3-654-773-00	PIN, PARALLEL
47	3-657-842-00	SPACER
48	**8-719-900-30**	**GL-3AR1**
51	2-269-962-00	COVER, SWITCH
52	2-275-609-00	STOPPER

Chassis Block


121
123
P3x8
B3x6
PS2.6x6
PS2.6x6
K4x16
112
124
112
K4x16
108
PSW2.6x6
PSW2.6x6
113
115
107
110
PS2x6
109
114
PS2.6x6
125
PS2.6x6
116
PS3x6
130
122
PS3x6
138
137
127
PS2.6x6
133
131
132
PS2.6x6
103
104
102
106
105
101
130
118
PS4x8
PS2.6x6
139
Serial No. 15506 and higher (J)
Serial No. 10901 and higher (U/C)
Serial No. 11101 and higher (P)
Serial No. 10006 and higher (PM)
Serial No. UP TO 15300 (J)
Serial No. UP TO 10300 (U/C)
Serial No. UP TO 10500 (P)
120
B3x6
P3x8
123
113
117
111
PS2.6x6
119
P3x8
PSW2.6x8
134
PSW2.6x8
PSW2.6x8
106
136
113
135
Serial No. 15301 and higher (J)
Serial No. 10301 and higher (U/C)
Serial No. 10501 and higher (P)
Serial No. 10001 and higher (PM)

No.	Part No.	Description
101	A-7511-441-A	MOUNTED CIRCUIT BOARD, "PW-47"
102	A-7511-442-A	MOUNTED CIRCUIT BOARD, "VA-5"
103	A-7511-443-A	MOUNTED CIRCUIT BOARD, "VA-6"
104	A-7511-444-A	MOUNTED CIRCUIT BOARD, "AU-14"
105	A-7511-445-A	MOUNTED CIRCUIT BOARD, "SG-31"
	A-7511-446-A	MOUNTED CIRCUIT BOARD, "SG-31A" (For PAL model)
	A-7511-608-A	MOUNTED CIRCUIT BOARD, "SG-31B" (For PM model)
⚠106	**A-7581-016-B**	**POWER ASS'Y (For J, U/C, PM)**
	A-7581-017-B	**POWER ASS'Y (For P)**
107	**1-426-037-00**	**TRANSFORMER, INPUT (T2)**
108	**1-427-348-00**	**TRANSFORMER, OUTPUT (T1)**
109	1-561-038-00	PLUG, HOUSING, FEMALE, 37P (CN5)
110	1-602-104-00	PRINTED CIRCUIT BOARD, "CN-19"
111	1-602-107-00	PRINTED CIRCUIT BOARD, "FU-9" (SEE PAGE 5-15)
112	2-253-306-00	TABLE, HANDLE
113	2-270-601-00	SUPPORT
114	2-270-602-00	RETAINER, RAIL
115	2-270-606-00	BRACKET (2), TRANSFORMER
116	2-270-609-00	BRACKET (1), TRANSFORMER
117	2-270-612-00	SUPPORT, COVER (SERIAL No. UP TO NOTE 4)
	2-270-612-02	SUPPORT, COVER (SERIAL No. NOTE 5 AND HIGHER)
118	2-270-614-00	SPACER
119	2-270-619-00	COVER, FUSE
120	2-270-635-00	COVER, LOWER
121	2-270-636-00	COVER, UPPER
122	2-270-655-00	RETAINER, LOCK
123	**3-143-272-00**	**FOOT, RUBBER**
124	**3-419-372-21**	**HANDLE**
125	3-637-210-00	GUIDE, PC BOARD
127	3-637-219-00	GUIDE HOOK, PWB
130	2-270-693-00	PLATE, LOCK
131	2-270-697-00	SPACER
132	2-270-698-00	CUSHION, FOOT
133	**4-812-554-11**	**WASHER**
134	2-275-612-00	COVER, FUSE
135	1-602-107-14	PRINTED CIRCUIT BOARD, "FU-9"
⚠136	**1-413-047-13**	**REGULATOR, SWITCHING (For J, U/C, PM)**
	1-413-047-23	**REGULATOR, SWITCHING (For P)**
137	2-286-717-00	STOPPER, BOARD
138	2-286-713-00	CUSHION, BOARD
139	2-251-622-00	LEVER, PC BOARD

NOTE:

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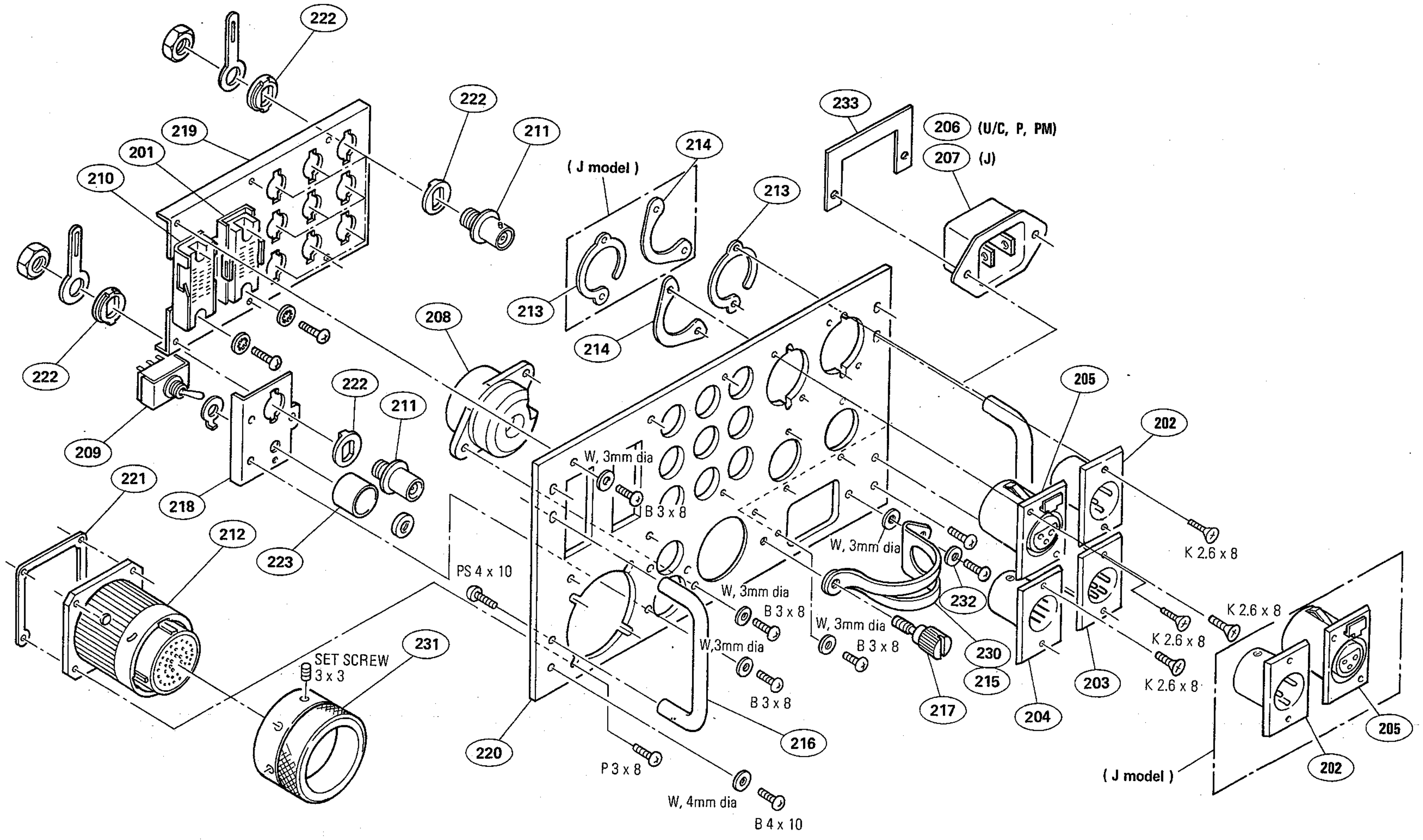
4. JAPAN #15300
   USA/CND #10300
   PAL model #10400
5. JAPAN #15301
   USA/CND #10301
   PAL model #10401
   PM model #10001

Rear Panel Block


222
222
211
(J model)
214
233
206 (U/C, P, PM)
207 (J)
219
201
210
213
208
213
214
222
222
211
209
221
218
212
223
205
202
W, 3mm dia
B 3 x 8
W, 3mm dia
PS 4 x 10
W, 3mm dia
B 3 x 8
W, 3mm dia
B 3 x 8
W,3mm dia
B 3 x 8
232
K 2.6 x 8
K 2.6 x 8
K 2.6 x 8
K 2.6 x 8
SET SCREW
3 x 3
231
230
215
217
204
203
205
220
216
P 3 x 8
W, 4mm dia
B 4 x 10
(J model)
202

No.	Part No.	Description
201	**1-508-551-00**	**RECEPTACLE, FEMALE, 16P**
202	**1-509-176-00**	**RECEPTACLE, XLR, 3P**
203	**1-509-177-00**	**RECEPTACLE, XLR, 4P**
204	**1-509-181-00**	**RECEPTACLE**
205	**1-509-184-00**	**RECEPTACLE, XLR, 3P**
⚠ **206**	**1-509-547-00**	**AC INLET (CN20) (For U/C, AEP, BRZ)**
⚠ **207**	**1-509-801-00**	**AC INLET (CN20) (For J model)**
⚠ **208**	**1-526-572-00**	**VOLTAGE SELECT (S12)**
209	**1-553-246-00**	**SWITCH, TOGGLE**
210	**1-560-103-00**	**RECEPTACLE, FEMALE, 24P (CN23)**
211	**1-561-053-00**	**RECEPTACLE, BNC**
212	1-561-482-00	RECEPTACLE, FEMALE, 41P (CN22)
213	2-243-720-00	NUT (XLR), PLATE
214	2-249-314-00	NUT, PLATE (XLR)
215	**2-270-615-00**	**CLAMP, CABLE (For U/C, AEP, BRZ model)**
216	2-270-616-00	HANDLE
217	**2-270-617-00**	**SCREW, KNOB**
218	2-270-618-00	MOUNT, CONNECTOR
219	2-270-629-00	PLATE, PAD
220	2-270-644-00	PANEL, REAR
221	2-270-648-00	NUT, PLATE (41P)
222	3-654-545-00	SPACER, BNC
223	3-657-644-00	GUARD, SWITCH
230	**2-270-688-00**	**CLAMP, CABLE (For J model)**
231	**2-270-694-00**	**RING**
232	2-275-604-00	SPACER
233	3-625-620-00	PLATE, WASHER

NOTE:

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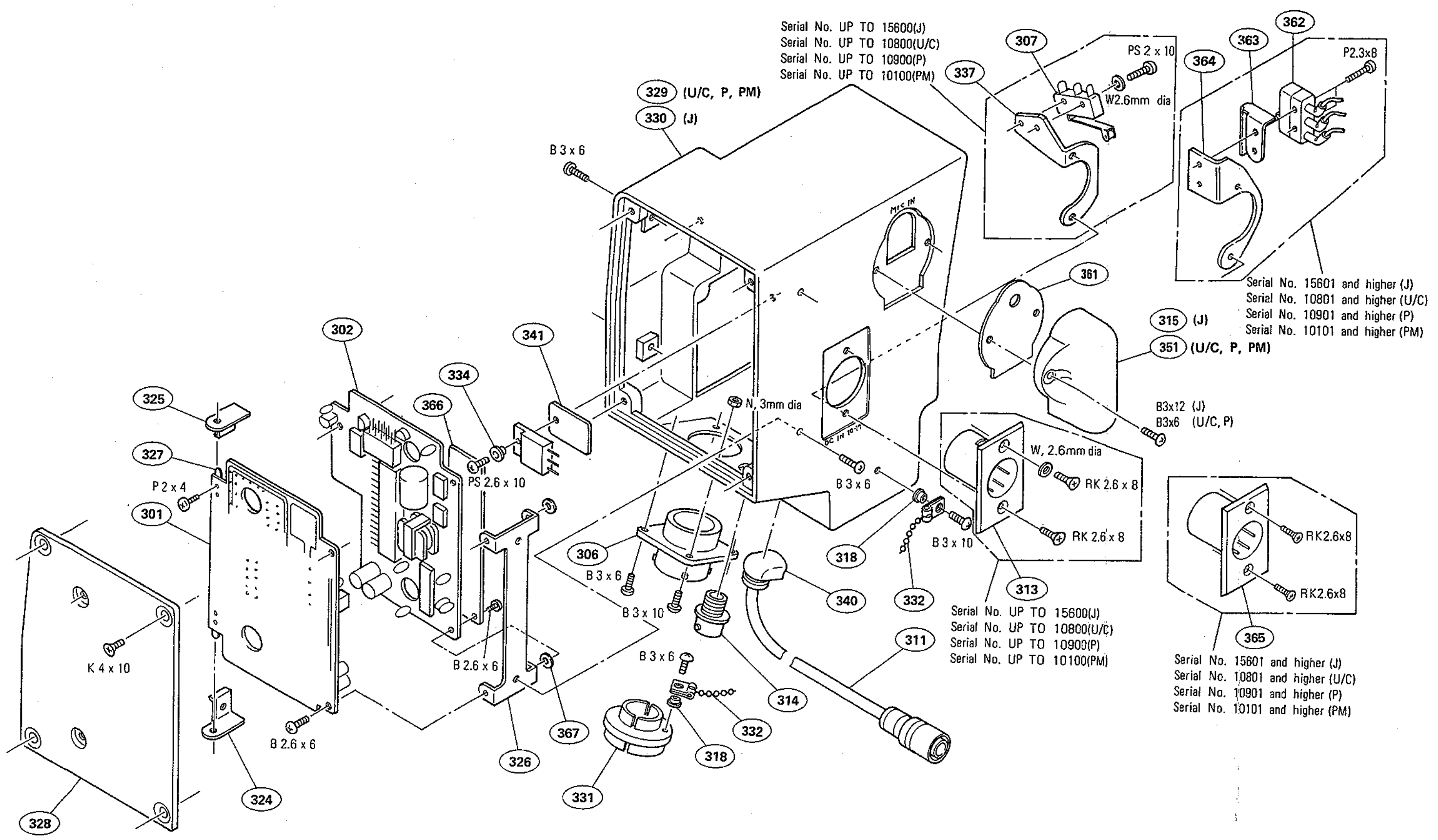
CCU Adaptor Block


Serial No. UP TO 15600(J)
Serial No. UP TO 10800(U/C)
Serial No. UP TO 10900(P)
Serial No. UP TO 10100(PM)
329 (U/C, P, PM)
330 (J)
B 3 x 6
337
307
PS 2 x 10
W2.6mm dia
364
363
362
P2.3x8
MIC IN
Serial No. 15601 and higher (J)
Serial No. 10801 and higher (U/C)
Serial No. 10901 and higher (P)
Serial No. 10101 and higher (PM)
361
315 (J)
351 (U/C, P, PM)
B3x12 (J)
B3x6 (U/C, P)
302
341
334
366
325
327
P 2 x 4
301
PS 2.6 x 10
N, 3mm dia
DC IN 10-17
B 3 x 6
W, 2.6mm dia
RK 2.6 x 8
RK 2.6 x 8
RK2.6x8
RK2.6x8
306
B 3 x 6
B 3 x 10
B 3 x 10
318
340
332
313
311
Serial No. UP TO 15600(J)
Serial No. UP TO 10800(U/C)
Serial No. UP TO 10900(P)
Serial No. UP TO 10100(PM)
365
Serial No. 15601 and higher (J)
Serial No. 10801 and higher (U/C)
Serial No. 10901 and higher (P)
Serial No. 10101 and higher (PM)
K 4 x 10
B 2.6 x 6
B 3 x 6
314
367
332
B 2.6 x 6
318
326
331
324
328

NOTE:

1. The shaded and ⚠-marked components are critical to safety. Replace only with same component as specified.
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3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

No.	Part No.	Description
301	A-7511-449-A	MOUNTED CIRCUIT BOARD, "CO-5"
⚠ 302	A-7511-450-A	MOUNTED CIRCUIT BOARD, "AU-15"
303	**1-226-809-00**	**VAR, SOLID 5K (RV101, RV102)**
304	**1-507-251-XX**	**JACK, MINI, JM35-M10 (J103)**
305	**1-507-676-00**	**JACK, PHONE**
306	**1-508-942-00**	**RECEPTACLE, MALE, 14P (CN102)**
307	**1-516-658-00**	**SWITCH, MICRO (S103)**
⚠ **308**	**1-533-154-00**	**HOLDER, FUSE**
309	**1-552-200-00**	**SWITCH, PUSH**
310	**1-552-504-00**	**SWITCH, TOGGLE**
311	**1-560-078-00**	**RECEPTACLE, MALE, 6P (CN106)**
312	**1-561-172-00**	**PLUG, HOUSING, FEMALE, 50P (CN103)**
313	**1-561-234-00**	**RECEPTACLE, MALE, XLR-4P (CN107)**
314	**1-561-376-00**	**RECEPTACLE, FEMALE, 4P (CN104)**
315	**1-561-578-00**	**RECEPTACLE, MALE, XLR-3P (CN105) (For J model)**
316	1-602-108-00	PRINTED CIRCUIT BOARD, "RC-13"
317	**1-932-441-00**	**HARNESS, ADAPTOR (WITH 41P RECEPTACLE)**
318	2-245-256-00	SPACER, SLIDE PLATE
319	**2-270-646-00**	**BUTTON, SWITCH**
320	**2-270-649-00**	**KNOB, A**
321	**2-270-663-00**	**BRACKET, JACK**
322	2-270-664-00	PLATE, JACK, W
323	2-270-665-00	PLATE INDICATION
324	2-270-666-00	TABLE, ROTARY (A)
325	2-270-667-00	TABLE, ROTARY (B)
326	2-270-668-00	BRACKET, PC BOARD
327	2-270-669-00	PLATE, CLAW, PC BOARD
328	2-270-670-00	LID, CHU ADAPTOR
329	2-270-671-00	ADAPTOR, CHU (U/C) (P) (PM)
330	2-270-672-00	ADAPTOR, CHU (J)
331	**2-270-676-00**	**CAP, CONNECTOR**
332	**2-270-677-00**	**CHAIN, BALL**
333	**2-832-003-00**	**BUSH, INSULATING**
334	**2-832-007-00**	**BUSHING (K), INSULATING**
335	**3-437-228-00**	**INSULATOR, JACK**
336	3-657-644-00	GUARD, SWITCH
337	3-657-663-00	NUT, PLATE
338	3-657-739-00	BRACKET, 50P
339	3-657-784-00	SPACER
340	**3-703-001-00**	**BUSHING, CORD**
341	**3-703-037-00**	**INSULATOR, TO-220**
351	**1-509-184-00**	**RECEPTACLE, XLR-3P (For U/C, AEP, BRZ)**
361	2-275-610-00	SPACER (For J)
362	**1-553-442-00**	**SWITCH, MICRO**
363	3-664-518-00	ACTUATOR
364	3-664-517-00	NUT, PLATE
365	**1-561-555-00**	**RECEPTACLE, MALE, XLR-4P**
366	2-275-613-00	INSULATOR, AU
367	**7-623-923-11**	**WASHER 2.6, NYLON**

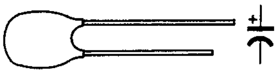
Serial No. 18101 and higher (J)
Serial No. 11901 and higher (U/C)
Serial No. 12701 and higher (P)
Serial No. 10406 and higher (PM)

5-3. ELECTRICAL PARTS LIST

CAPACITOR

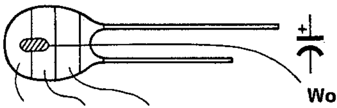
**Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.**

TANTALUM CAPACITOR



**0.01μF through 100μF ± 10%
3.15V through 35V**

NOTE: The value of the parts that are marked by * in the below table are indicated by color code. (to the value with ±20%)



Working Voltage Color Code

Ex. BRN GRN BLU
1 5 6
15 x 10^6 pF = 15μF

BLK	RED	YEL	GRN	BLU	GRY	WHT
10V	35	6.3	16	20	25	3.15

Parts No. 1-131-□□□-00

Value		Parts No. —□□□—
0.01μ	35V	*396
0.015	35	*397
0.022	35	*398
0.033	35	*399
0.047	35	*400
0.068	35	*401
0.1	35	*402
0.15	35	*403
0.22	35	*404
0.33	25	*409
	35	*405
0.47	20	*412
	35	*406
0.68	16	*415
	25	*410
	35	*407
1.0	10	*418
	20	*413

Value		Parts No. —□□□—
1.0μ	35V	*408
1.5	6.3	*421
	16	*416
	25	*411
	35	348
2.2	3.15	*424
	10	*419
	20	*414
	25	355
	35	349
3.3	6.3	*422
	16	*417
	20	362
	25	356
	35	350
4.7	3.15	*425
	10	*420
	16	369

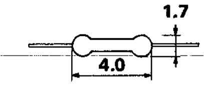
Value		Parts No. —□□□—
4.7μ	20V	363
	25	357
	35	351
6.8	6.3	*423
	10	376
	16	370
	20	364
	25	358
	35	352
10	3.15	*426
	6.3	383
	10	377
	16	371
	20	365
	25	359
	35	353
15	3.15	390
	6.3	384

Value		Parts No. —□□□—
15μ	10V	378
	16	372
	20	366
	25	360
22	3.15	391
	6.3	385
	10	379
	16	373
	20	367
33	3.15	392
	6.3	386
	10	380
	16	374
47	3.15	393
	6.3	387
	10	381
68	3.15	394
	6.3	388
100	3.15	395

RESISTOR

CARBON RESISTOR (1/8W)

±5%, 1/8W, non-special type
2.2Ω through 1MΩ



Parts No. 1-246-□□□-00

Value	Parts No. −□□□−
1Ω	–
1.1	–
1.2	–
1.3	–
1.5	–
1.6	–
1.8	–
2	–
2.2	751
2.4	812
2.7	752
3	813
3.3	753
3.6	814
3.9	754
4.3	815
4.7	755
5.1	816
5.6	756
6.2	817
6.8	757
7.5	818
8.2	758
9.1	819
10Ω	759
11	820
12	760
13	821
15	761
16	822
18	762
20	823
22	763
24	824
27	764
30	825

Value	Parts No. −□□□−
33Ω	765
36	826
39	766
43	827
47	767
51	828
56	768
62	829
68	769
75	830
82	770
91	831
100Ω	771
110	832
120	772
130	833
150	773
160	834
180	774
200	835
220	775
240	836
270	776
300	837
330	777
360	838
390	778
430	839
470	779
510	840
560	780
620	841
680	781
750	842
820	782
910	843

Value	Parts No. −□□□−
1kΩ	783
1.1	844
1.2	784
1.3	845
1.5	785
1.6	846
1.8	786
2	847
2.2	787
2.4	848
2.7	788
3.0	849
3.3	789
3.6	850
3.9	790
4.3	851
4.7	791
5.1	852
5.6	792
6.2	853
6.8	793
7.5	854
8.2	794
9.1	855
10kΩ	795
11	856
12	796
13	857
15	797
16	858
18	798
20	859
22	799
24	860
27	800
30	861

Value	Parts No. −□□□−
33kΩ	801
36	862
39	802
43	863
47	803
51	864
56	804
62	865
68	805
75	866
82	806
91	867
100kΩ	807
110	868
120	808
130	869
150	809
160	870
180	810
200	871
220	811

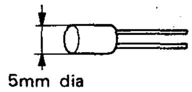
Parts No. 1-247-□□□-00

Value	Parts No. −□□□−
240kΩ	054
270	046
300	055
330	047
360	056
390	048
430	057
470	049
510	058
560	050
620	059
680	051
750	060
820	052
910	061
1MΩ	053

INDUCTOR

MICRO INDUCTOR

1 μH through 470 μH
±5%



Parts No. 1-407-□□□-XX

Value	Parts No. -□□□-
1 μH	178
1.2	179
1.5	180
1.8	181
2.2	182
2.7	183
3.3	184
3.9	185

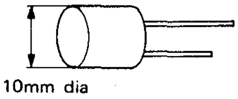
Value	Parts No. -□□□-
4.7 μH	186
5.6	187
6.8	188
8.2	189
10	157
12	158
15	159
18	160

Value	Parts No. -□□□-
22 μH	161
27	162
33	163
39	164
47	165
56	166
68	167
82	168

Value	Parts No. -□□□-
100 μH	169
120	170
150	171
180	172
220	173
270	174
330	175
390	176
470	177

MICRO INDUCTOR

470 μH through 33 mH
±5%



Parts No. 1-407-□□□-00

Value	Parts No. -□□□-
470 μH	488
560	489
680	490
820	491
1 mH	492
1.2	493

Value	Parts No. -□□□-
1.5 mH	494
1.8	495
2.2	496
2.7	497
3.3	498
3.9	499

Value	Parts No. -□□□-
4.7 mH	500
5.6	501
6.8	502
8.2	503
10	504
12	505

Value	Parts No. -□□□-
15 mH	506
18	507
22	508
27	509
33	510

ABBREVIATION

REF. No.	DESCRIPTION	REF. No.	DESCRIPTION	REF. No.	DESCRIPTION
C	CAPACITOR	IC	IC	RV	VARIABLE RESISTOR
CN	CONNECTOR	J	JACK	S	SWITCH
D	DIODE	L	INDUCTOR	SP	SPEAKER
DL	DELAY LINE	Q	TRANSISTOR	T	TARANSFORMER
F	FUSE	R	RESISTOR	X	CRYSTAL
FB	FERRITE BEAD				

All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohrms.

CCU-300/300P/300PM

Ref. No.	Parts No.	Description
AU-14 BOARD		**S/N: Up to 18100 (J)** **S/N: Up to 11900 (U/C)** **S/N: Up to 12700 (AEP)** **S/N: Up to 10405 (BRZ)**
	A-7511-444-A	MOUNTED CIRCUIT BOARD, "AU-14"
C13	1-108-237-00	MYLAR 0.0068 10% 50V
C15	1-107-078-00	MICA 51PF 5% 50V
C19	1-123-309-00	ELECT 330 20% 10V
C20	1-123-309-00	ELECT 330 20% 10V
C21	1-123-309-00	ELECT 330 20% 10V
C22	1-123-309-00	ELECT 330 20% 10V
C23	1-108-239-00	MYLAR 0.01 10% 50V
C24	1-123-309-00	ELECT 330 20% 10V
C25	1-123-309-00	ELECT 330 20% 10V
C26	1-123-309-00	ELECT 330 20% 10V
C27	1-123-309-00	ELECT 330 20% 10V
C29	1-108-242-00	MYLAR 0.022 10% 50V
C36	1-108-242-00	MYLAR 0.022 10% 50V
C38	1-123-320-00	ELECT 100 20% 16V
C39	1-123-321-00	ELECT 220 20% 16V
C40	1-123-321-00	ELECT 220 20% 16V
C41	1-123-321-00	ELECT 220 20% 16V
C42	1-123-321-00	ELECT 220 20% 16V
C43	1-130-479-00	MYLAR 0.0047 50V
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-182-07	RD8.2E
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D9	8-719-815-55	1S1555
D10	8-719-815-55	1S1555
D11	8-719-815-55	1S1555
D12	8-719-111-07	RD11E-B

Ref. No.	Parts No.	Description
IC1	8-759-990-84	TL084CN; TI
IC2	8-759-990-84	TL084CN; TI
IC3	8-759-990-84	TL084CN; TI
IC4	8-759-240-01	TC4001BP, C-MOS (CD4001BE; RCA)
Q1	8-765-020-00	2SA884
Q2	8-765-020-00	2SA884
Q3	8-765-222-20	2SC1963
Q4	8-761-622-00	2SC1636
Q5	8-761-622-00	2SC1636
Q6	8-729-316-23	2SC1162
Q7	8-729-371-53	2SA715-D
Q8	8-729-663-47	2SC1364
Q9	8-729-663-47	2SC1364
Q10	8-724-375-01	2SC403C
Q11	8-724-375-01	2SC403C
Q12	8-729-612-77	2SA1027R
Q13	8-724-375-01	2SC403C
Q14	8-724-375-01	2SC403C
R54	1-246-425-00	CARBON 10 5% 1/4W
R55	1-246-409-00	CARBON 2.2 5% 1/4W
R56	1-246-409-00	CARBON 2.2 5% 1/4W
R57	1-246-425-00	CARBON 10 5% 1/4W
R58	1-246-435-00	CARBON 27 5% 1/4W
RV1	1-224-936-00	VAR, METAL 500
RV2	1-224-934-00	VAR, METAL 100
RV3	1-224-941-00	VAR, METAL 20K
RV4	1-224-932-00	VAR, METAL 50K
S1	1-553-439-00	TOGGLE
S2	1-553-439-00	TOGGLE
SP1	1-502-913-00	SPEAKER, "ALARM"
T1	1-426-038-00	INPUT
T2	1-426-038-00	OUTPUT
T3	1-426-038-00	INPUT
T4	1-426-038-00	

NOTES:

1. **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

CCU-300/300P/300PM

AU-14 BOARD
S/N: 18101 and higher (J)
S/N: 11901 and higher (U/C)
S/N: 12701 and higher (AEP)
S/N: 10406 and higher (BRZ)

Ref. No.	Parts No.	Description
	A-7511-444-B	MOUNTED CIRCUIT BOARD, "AU-14"
C6	**1-130-479-00**	**MYLAR 0.0047 5% 50V**
C7	**1-130-018-00**	**MYLAR 0.001 10% 50V**
C10	**1-130-018-00**	**MYLAR 0.001 10% 50V**
C13	**1-108-237-00**	**MYLAR 0.0068 10% 50V**
C15	**1-107-078-00**	**MICA 51PF 5% 50V**
C19	**1-123-309-00**	**ELECT 330 20% 10V**
C20	**1-123-309-00**	**ELECT 330 20% 10V**
C21	**1-123-309-00**	**ELECT 330 20% 10V**
C22	**1-123-309-00**	**ELECT 330 20% 10V**
C23	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C24	**1-123-309-00**	**ELECT 330 20% 10V**
C25	**1-123-309-00**	**ELECT 330 20% 10V**
C26	**1-123-309-00**	**ELECT 330 20% 10V**
C27	**1-123-309-00**	**ELECT 330 20% 10V**
C29	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C36	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C38	**1-123-320-00**	**ELECT 100 20% 16V**
C48	**1-123-321-00**	**ELECT 220 20% 16V**
C49	**1-123-321-00**	**ELECT 220 20% 16V**
C50	**1-123-321-00**	**ELECT 220 20% 16V**
C51	**1-123-321-00**	**ELECT 220 20% 16V**
C54	**1-130-479-00**	**MYLAR 0.0047 5% 50V**
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-182-07**	**RD8.2E**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
D8	**8-719-815-55**	**1S1555**
D9	**8-719-815-55**	**1S1555**
D10	**8-719-815-55**	**1S1555**
D11	**8-719-815-55**	**1S1555**
D12	**8-719-111-07**	**RD11E-B**
D13	**8-719-111-07**	**RD11E-B**

Ref. No.	Parts No.	Description
IC1	**8-759-745-60**	**NJM4560D (JRC)**
IC2	**8-759-745-60**	**NJM4560D (JRC)**
IC3	**8-759-745-60**	**NJM4560D (JRC)**
IC4	**8-759-745-60**	**NJM4560D (JRC)**
IC5	**8-759-745-60**	**NJM4560D (JRC)**
IC6	**8-759-240-01**	**TC4001BP, C-MOS (CD4001BE; RCA)**
Q1	**8-765-020-00**	**2SA884**
Q2	**8-765-020-00**	**2SA884**
Q3	**8-765-222-00**	**2SC1963**
Q4	**8-761-622-00**	**2SC1636**
Q5	**8-761-622-00**	**2SC1636**
Q6	**8-729-316-23**	**2SC1162**
Q7	**8-729-371-53**	**2SA715-D**
Q8	**8-729-663-47**	**2SC1364**
Q9	**8-729-663-47**	**2SC1364**
Q10	**8-724-375-01**	**2SC403C**
Q11	**8-724-375-01**	**2SC403C**
Q12	**8-729-612-77**	**2SA1027R**
Q13	**8-724-375-01**	**2SC403C**
Q14	**8-724-375-01**	**2SC403C**
Q15	**8-729-609-06**	**2SC1209**
R54	**1-246-433-00**	**CARBON 22 5% 1/4W**
R55	**1-246-409-00**	**CARBON 2.2 5% 1/4W**
R56	**1-246-409-00**	**CARBON 2.2 5% 1/4W**
R57	**1-246-433-00**	**CARBON 22 5% 1/4W**
R58	**1-246-435-00**	**CARBON 27 5% 1/4W**
RV1	**1-224-936-00**	**VAR, METAL 500**
RV2	**1-224-934-00**	**VAR, METAL 100**
RV3	**1-224-941-00**	**VAR, METAL 20K**
RV4	**1-224-937-00**	**VAR, METAL 1K**
RV5	**1-224-937-00**	**VAR, METAL 1K**
RV6	**1-224-937-00**	**VAR, METAL 1K**
RV7	**1-224-936-00**	**VAR, METAL 1K**
S1	**1-553-439-00**	**TOGGLE**
S2	**1-553-441-00**	**TOGGLE**
S3	**1-553-441-00**	**TOGGLE**
SP1	**1-502-913-00**	**SPEAKER, "ALARM"**
T1	**1-426-038-00**	**INPUT**
T2	**1-426-038-00**	**OUTPUT**
T3	**1-426-038-00**	**INPUT**
T4	**1-426-038-00**	

NOTES:

1. **The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.**

2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

Ref. No.	Parts No.	Description
CN-19 BOARD		
	1-602-104-00	PRINTED CIRCUIT BOARD, "CN-19"
C1	**1-123-331-00**	**ELECT 33 20% 25V**
C2	**1-123-331-00**	**ELECT 33 20% 25V**
C3	**1-123-331-00**	**ELECT 33 20% 25V**
CN301	1-560-049-00	RECEPTACLE, MALE, 30P
	1-561-174-00	PLUG, HOUSING, FEMALE, 30P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN302	1-560-046-00	RECEPTACLE, MALE, 10P
	1-561-177-00	PLUG, HOUSING, FEMALE, 10P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN303	1-506-348-XX	RECEPTACLE, MALE, 5P
	1-509-909-00	**PLUG, HOUSING, FEMALE, 5P**
	1-509-898-00	**CONTACT, FEMALE**
CN304	1-506-348-XX	RECEPTACLE, MALE, 3P
	1-509-896-00	**PLUG, HOUSING, FEMALE, 3P**
	1-506-898-00	**CONTACT, FEMALE**
CN305	1-506-348-XX	RECEPTACLE, MALE, 3P
	1-509-896-00	**PLUG, HOUSING, FEMALE, 3P**
	1-509-898-00	**CONTACT, FEMALE**
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
Q2	**8-724-375-01**	**2SC403C**
Q3	**8-724-375-01**	**2SC403C**
R3	**1-246-465-00**	**CARBON 470 5% 1/4W**
FU-9 BOARD (U/C, J, BRZ) **FU-9A BOARD (AEP)**		
	⚠ 1-602-107-00	PRINTED CIRCUIT BOARD, "FU-9" JAPAN UP TO #15300 USA/CND UP TO #10300 AEP UP TO #10500
	⚠ 1-602-107-14	PRINTED CIRCUIT BOARD, "FU-9" JAPAN #15301 & HIGHER USA/CND #10301 & HIGHER AEP #10501 & HIGHER BRZ #10001 & HIGHER
	1-517-072-00	**FUSE HOLDER (U/C, J)**
	1-533-131-00	**FUSE HOLDER (AEP)**
⚠ CN201	1-506-348-XX	RECEPTACLE, MALE, 3P
	⚠ 1-509-896-00	**PLUG, HOUSING, FEMALE, 3P**
	⚠ 1-509-898-00	**CONTACT, FEMALE**
⚠ CN202	1-506-371-00	RECEPTACLE, MALE, 2P
	⚠ 1-509-910-00	**PLUG, HOUSING, FEMALE, 2P**
	⚠ 1-509-898-00	**CONTACT, FEMALE**
CN203	1-560-047-00	RECEPTACLE, MALE, 12P
	1-561-178-00	PLUG, HOUSING, FEMALE, 12P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
⚠ F1	**1-532-349-XX**	**4A (U/C, J)**
⚠ F2	**1-532-349-XX**	**4A (U/C, J, BRZ)** **SEE PAGE 4-42**
⚠ F3	**1-532-268-XX**	**2A (U/C, J, BRZ)**
⚠ F4	**1-532-268-XX**	**2A (U/C, J, BRZ)**
⚠ F1	**1-532-350-00**	**T 4A (AEP)**
⚠ F2	**1-532-350-00**	**T 4A (AEP)** **SEE PAGE 4-42**
⚠ F3	**1-532-203-00**	**T 2A (AEP)**
⚠ F4	**1-532-203-00**	**T 2A (AEP)**
IF-29 BOARD		
	A-7511-447-A	MOUNTED CIRCUIT BOARD, "IF-29"
C15	**1-108-239-00**	**MYLAR 0.01 10% 50V**

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Ref. No.	Parts No.	Description
CN1	1-560-049-00	RECEPTACLE, MALE, 30P
	1-561-174-00	PLUG, HOUSING, FEMALE, 30P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN2	1-560-135-00	RECEPTACLE, MALE, 14P
	1-561-036-00	PLUG, HOUSING, FEMALE, 14P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN3	1-560-045-00	RECEPTACLE, MALE, 8P
	1-561-176-00	PLUG, HOUSING, FEMALE, 8P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN4	1-508-906-00	RECEPTACLE, MALE, 10P
	1-509-989-00	PLUG, HOUSING, FEMALE, 10P
	1-509-982-00	CONTACT, FEMALE
CN5	1-560-044-00	RECEPTACLE, MALE, 6P
	1-561-175-00	PLUG, HOUSING, FEMALE, 6P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN6	1-560-046-00	RECEPTACLE, MALE, 10P
	1-561-177-00	PLUG, HOUSING, FEMALE, 10P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
D1	**8-719-156-25**	**RD5.6E-B2Z**
D2	**8-719-130-07**	**RD3.0E**
IC1	**8-759-900-64**	**TL064CN; TI**
IC2	**8-759-900-64**	**TL064CN; TI**
IC3	**8-759-900-64**	**TL064CN; TI**
IC4	**8-759-990-82**	**TL082CP; TI**
IC5	**8-759-240-53**	**TC4053BP, C-MOS (CD4053BE; RCA)**
IC6	**8-759-240-53**	**TC4053BP, C-MOS (CD4053BE; RCA)**
IC7	**8-759-240-53**	**TC4053BP, C-MOS (CD4053BE; RCA)**
IC8	**8-759-900-64**	**TL064CN; TI**
IC9	**8-759-250-22**	**TC5022BP, C-MOS; TOSHIBA**
Q1	**8-729-612-77**	**2SA1027R**
Q2	**8-729-612-77**	**2SA1027R**
Q3	**8-724-375-01**	**2SC403C**
Q4	**8-724-375-01**	**2SC403C**
Q5	**8-724-375-01**	**2SC403C**
Q6	**8-724-375-01**	**2SC403C**
Q7	**8-729-612-77**	**2SA1027R**
R1	**1-214-589-00**	**METAL 22K 1% 1/8W**
R2	**1-214-593-00**	**METAL 33K 1% 1/8W**
R3	**1-214-589-00**	**METAL 22K 1% 1/8W**
R4	**1-214-593-00**	**METAL 33K 1% 1/8W**
R5	**1-214-589-00**	**METAL 22K 1% 1/8W**

Ref. No.	Parts No.	Description
R6	**1-214-593-00**	**METAL 33K 1% 1/8W**
R7	**1-214-589-00**	**METAL 22K 1% 1/8W**
R8	**1-214-593-00**	**METAL 33K 1% 1/8W**
R9	**1-214-593-00**	**METAL 33K 1% 1/8W**
R10	**1-214-593-00**	**METAL 33K 1% 1/8W**
R11	**1-214-593-00**	**METAL 33K 1% 1/8W**
R12	**1-214-593-00**	**METAL 33K 1% 1/8W**
R13	**1-214-550-00**	**METAL 510 1% 1/8W**
R14	**1-214-593-00**	**METAL 33K 1% 1/8W**
R15	**1-214-593-00**	**METAL 33K 1% 1/8W**
R16	**1-214-593-00**	**METAL 33K 1% 1/8W**
R17	**1-214-593-00**	**METAL 33K 1% 1/8W**
R18	**1-214-573-00**	**METAL 4.7K 1% 1/8W**
R19	**1-214-593-00**	**METAL 33K 1% 1/8W**
R20	**1-214-593-00**	**METAL 33K 1% 1/8W**
R21	**1-214-593-00**	**METAL 33K 1% 1/8W**
R22	**1-214-593-00**	**METAL 33K 1% 1/8W**
R23	**1-214-550-00**	**METAL 510 1% 1/8W**
R24	**1-214-593-00**	**METAL 33K 1% 1/8W**
R25	**1-214-593-00**	**METAL 33K 1% 1/8W**
R26	**1-214-593-00**	**METAL 33K 1% 1/8W**
R27	**1-214-593-00**	**METAL 33K 1% 1/8W**
R28	**1-214-573-00**	**METAL 4.7K 1% 1/8W**
R32	**1-214-589-00**	**METAL 22K 1% 1/8W**
R36	**1-214-589-00**	**METAL 22K 1% 1/8W**
R37	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R38	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R39	**1-214-581-00**	**METAL 10K 1% 1/8W**
R40	**1-214-581-00**	**METAL 10K 1% 1/8W**
R41	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R42	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R43	**1-214-581-00**	**METAL 10K 1% 1/8W**
R44	**1-214-581-00**	**METAL 10K 1% 1/8W**
R45	**1-214-593-00**	**METAL 33K 1% 1/8W**
R46	**1-214-593-00**	**METAL 33K 1% 1/8W**
R47	**1-214-593-00**	**METAL 33K 1% 1/8W**
R48	**1-214-593-00**	**METAL 33K 1% 1/8W**
R49	**1-214-573-00**	**METAL 4.7K 1% 1/8W**
R50	**1-214-593-00**	**METAL 33K 1% 1/8W**
R51	**1-214-593-00**	**METAL 33K 1% 1/8W**
R52	**1-214-593-00**	**METAL 33K 1% 1/8W**
R53	**1-214-593-00**	**METAL 33K 1% 1/8W**
R54	**1-214-569-00**	**METAL 3.3K 1% 1/8W**
R55	**1-214-593-00**	**METAL 33K 1% 1/8W**
R56	**1-214-593-00**	**METAL 33K 1% 1/8W**
R57	**1-214-593-00**	**METAL 33K 1% 1/8W**
R58	**1-214-593-00**	**METAL 33K 1% 1/8W**
R59	**1-214-576-00**	**METAL 6.2K 1% 1/8W**
R63	**1-214-593-00**	**METAL 33K 1% 1/8W**
R64	**1-214-593-00**	**METAL 33K 1% 1/8W**

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Ref. No.	Parts No.	Description
R65	**1-214-593-00**	**METAL 33K 1% 1/8W**
R66	**1-214-593-00**	**METAL 33K 1% 1/8W**
R67	**1-214-573-00**	**METAL 4.7K 1% 1/8W**
R68	**1-214-593-00**	**METAL 33K 1% 1/8W**
R69	**1-214-593-00**	**METAL 33K 1% 1/8W**
R70	**1-214-593-00**	**METAL 33K 1% 1/8W**
R71	**1-214-593-00**	**METAL 33K 1% 1/8W**
R72	**1-214-569-00**	**METAL 3.3K 1% 1/8W**
R73	**1-214-589-00**	**METAL 22K 1% 1/8W**
R74	**1-214-573-00**	**METAL 4.7K 1% 1/8W**
R75	**1-214-589-00**	**METAL 22K 1% 1/8W**
R76	**1-214-551-00**	**METAL 560 1% 1/8W**
RV1	**1-224-930-00**	**VAR, METAL 10K**
RV2	**1-224-930-00**	**VAR, METAL 10K**
RV3	**1-224-930-00**	**VAR, METAL 10K**
RV4	**1-224-930-00**	**VAR, METAL 10K**
RV5	**1-224-939-00**	**VAR, METAL 5K**
S1	**1-553-252-00**	**ROTARY**

LP-10 BOARD

Ref. No.	Parts No.	Description
	1-602-105-00	PRINTED CIRCUIT BOARD, "LP-10"
D1	**8-719-803-12**	**TLR312, 7-SEGMENT LED**

PW-47 BOARD

Ref. No.	Parts No.	Description
	A-7511-441-A	MOUNTED CIRCUIT BOARD, "PW-47"
C1	**1-131-497-00**	**TANTALUM 220 20% 30V**
C2	**1-130-193-00**	**POLYESTER 0.47 100V**
C4	**1-161-459-00**	**CERAMIC 100PF 5% 50V**
C7	**1-131-497-00**	**TANTALUM 220 20% 30V**
C8	**1-131-466-00**	**TANTALUM 150 20% 16V**
C9	**1-130-193-00**	**POLYESTER 0.47 100V**
C10	**1-131-465-00**	**TANTALUM 68 20% 16V**
C11	**1-131-463-00**	**TANTALUM 4.7 20% 50V**
C14	**1-131-465-00**	**TANTALUM 68 20% 16V**
C22	**1-131-466-00**	**TANTALUM 150 20% 16V**
C23	**1-131-466-00**	**TANTALUM 150 20% 16V**
C28	**1-131-466-00**	**TANTALUM 150 20% 16V**
C29	**1-131-466-00**	**TANTALUM 150 20% 16V**
C30	**1-161-481-00**	**CERAMIC 0.047 10% 50V**
C31	**1-108-563-00**	**MYLAR 0.0022 5% 50V**
C32	**1-108-567-00**	**MYLAR 0.0033 5% 50V**
C33	**1-108-559-00**	**MYLAR 0.0015 5% 50V**
C34	**1-101-361-00**	**CERAMIC 150PF 5% 50V**
C41	**1-108-571-00**	**MYLAR 0.0047 5% 50V**
C42	**1-108-583-00**	**MYLAR 0.015 5% 50V**
C43	**1-108-587-00**	**MYLAR 0.022 5% 50V**
C44	**1-109-164-00**	**MICA 560PF 5% 300V**
C45	**1-130-193-00**	**POLYESTER 0.47 100V**
C46	**1-130-193-00**	**POLYESTER 0.47 100V**
C47	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C48	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C49	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	**8-719-182-07**	**RD8.2E**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-981-00**	**ERC81-004**
D4	**8-719-182-07**	**RD8.2E**
D6	**8-719-815-85**	**1S1585**
D7	**8-719-982-04**	**ERB81-004**
D8	**8-719-815-85**	**1S1585**
D9	**8-719-982-04**	**ERB81-004**
D10	**8-719-982-04**	**ERB81-004**
D11	**8-719-982-04**	**ERB81-004**

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Ref. No.	Parts No.	Description
D16	8-719-815-55	1S1555
D17	8-719-815-55	1S1555
D18	8-719-815-55	1S1555
D19	8-719-815-55	1S1555
D20	8-719-107-67	RD51E-B
D21	8-719-107-67	RD51E-B
IC1	8-759-905-80	AD580M; ANALOG DEVICE
IC2	8-759-133-90	µPC339C (LM339; NSC)
IC3	8-759-990-82	TL082CP; TI
IC4	8-759-990-82	TL082CP; TI
IC5	8-759-140-11	µPD4011BC, C-MOS (CD4011BE; RCA)
IC6	8-759-240-53	TC4053BP, C-MOS (CD4053BE; RCA)
IC7	8-759-240-53	TC4053BP, C-MOS (CD4053BE; RCA)
IC8	8-759-240-53	TC4053BP, C-MOS (CD4053BE; RCA)
IC9	8-759-940-98	CD4098BE, C-MOS; RCA
IC10	8-759-140-17	µPD4017C, C-MOS (CD4017AE; RCA)
IC11	8-759-140-14	µPD4014C, C-MOS (CD4014AE; RCA)
L1	1-408-142-00	22.5
L2	1-408-144-00	206
L3	1-421-013-00	25
L5	1-421-013-00	25
L6	1-421-013-00	25
L7	1-421-013-00	25
Q1	8-729-364-12	2SC641K
Q2	8-760-524-13	2SA772(LTD)
Q3	8-760-524-13	2SA772(LTD)
Q4	8-760-415-10	2SC1475-15
Q5	8-760-415-10	2SC1475-15
Q6	8-760-335-10	2SC1474
Q8	8-763-213-00	2SA861
Q9	8-724-375-01	2SC403C
Q10	8-763-113-00	2SC1761
Q11	8-729-364-12	2SC641K
Q12	8-724-375-01	2SC403C
Q13	8-724-375-01	2SC403C
Q14	8-729-612-77	2SA1027R
Q15	8-729-364-12	2SC641K
Q16	8-729-364-12	2SC641K

Ref. No.	Parts No.	Description
Q17	8-729-364-12	2SC641K
Q18	8-729-364-12	2SC641K
Q19	8-724-375-01	2SC403C
R2	1-214-566-00	METAL 2.4K 1% 1/8W
R3	1-214-578-00	METAL 7.5K 1% 1/8W
R5	1-214-591-00	METAL 27K 1% 1/8W
R6	1-214-591-00	METAL 27K 1% 1/8W
R7	1-214-591-00	METAL 27K 1% 1/8W
R8	1-214-575-00	METAL 5.6K 1% 1/8W
R9	1-214-591-00	METAL 27K 1% 1/8W
R13	1-214-585-00	METAL 15K 1% 1/8W
R14	1-214-572-00	METAL 4.3K 1% 1/8W
R22	1-244-853-00	CARBON 150 5% 1/2W
R25	1-214-581-00	METAL 10K 1% 1/8W
R26	1-214-581-00	METAL 10K 1% 1/8W
R27	1-214-577-00	METAL 6.8K 1% 1/8W
R28	1-214-566-00	METAL 2.4K 1% 1/8W
R33	1-214-583-00	METAL 12K 1% 1/8W
R34	1-214-585-00	METAL 15K 1% 1/8W
R62	1-214-574-00	METAL 5.1K 1% 1/8W
R63	1-214-587-00	METAL 18K 1% 1/8W
R68	1-214-589-00	METAL 22K 1% 1/8W
R69	1-214-593-00	METAL 33K 1% 1/8W
RV1	1-224-937-00	VAR, METAL 1K
RV2	1-224-937-00	VAR, METAL 1K
RV3	1-224-935-00	VAR, METAL 200
RV4	1-224-937-00	VAR, METAL 1K
RV5	1-224-942-00	VAR, METAL 50K
S1	1-553-439-00	TOGGLE
T1	1-446-105-00	DC-DC CONVERTER

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Ref. No.	Parts No.	Description
SG-31 BOARD (U/C, J)		
SG-31A BOARD (AEP)		
SG-31B BOARD (BRZ)		
	A-7511-445-A	MOUNTED CIRCUIT BOARD, "SG-31" (U/C, J)
	A-7511-446-A	MOUNTED CIRCUIT BOARD, "SG-31A" (AEP)
	A-7511-608-A	MOUNTED CIRCUIT BOARD "SG-31B" (BRZ)
	2-270-662-00	KNOB, SG
C1	**1-102-961-00**	**CERAMIC 27PF 5% 50V**
C2	**1-101-880-00**	**CERAMIC 47PF 5% 50V**
C3	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C4	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C5	**1-130-487-00**	**MYLAR 0.022 10% 50V**
C12	**1-107-105-00**	**MICA 8PF 50V (U/C, J, BRZ)**
	1-107-103-00	**MICA 6PF 50V (AEP)**
C13	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C14	**1-161-475-00**	**CERAMIC 0.033 10% 50V**
C15	**1-161-458-00**	**CERAMIC 82PF 5% 50V**
C20	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C21	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C23	**1-161-471-00**	**CERAMIC 0.001 10% 50V (AEP)**
C24	**1-161-464-00**	**CERAMIC 270PF 5% 50V**
C25	**1-161-469-00**	**CERAMIC 680PF 5% 50V (AEP)**
C27	**1-130-479-00**	**MYLAR 0.0047 10% 50V**
C30	**1-107-081-00**	**MICA 68PF 5% 50V (U/C, J, BRZ)**
	1-107-077-00	**MICA 47PF 5% 50V (AEP)**
C32	**1-161-461-00**	**CERAMIC 150PF 5% 50V**
C35	**1-130-481-00**	**MYLAR 0.0068 5% 50V**
C37	**1-107-073-00**	**MICA 33PF 5% 50V**
C42	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C45	**1-107-073-00**	**MICA 33PF 5% 50V**
C47	**1-161-459-00**	**CERAMIC 100PF 5% 50V (U/C, J, BRZ)**
	1-107-079-00	**MICA 56PF 5% 50V (AEP)**
C48	**1-107-075-00**	**MICA 39PF 5% 50V (U/C, J, BRZ)**
	1-107-072-00	**MICA 30PF 50V (AEP)**
C49	**1-161-473-00**	**CERAMIC 0.01 10% 50V**
C54	**1-107-081-00**	**MICA 68PF 5% 50V (U/C, J, BRZ)**
	1-107-077-00	**MICA 47PF 5% 50V (AEP)**
C56	**1-161-473-00**	**CERAMIC 0.01 10% 50V**
C58	**1-161-473-00**	**CERAMIC 0.01 10% 50V**
C59	**1-161-473-00**	**CERAMIC 0.01 10% 50V**
C63	**1-107-101-00**	**MICA 4PF 50V**
C64	**1-107-078-00**	**MICA 51PF 5% 50V**
C66	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C67	**1-161-482-00**	**CERAMIC 0.068 10% 50V**
C68	**1-161-473-00**	**CERAMIC 0.01 10% 50V**
C70	**1-107-077-00**	**MICA 47PF 5% 50V (AEP, BRZ)**
C71	**1-107-077-00**	**MICA 47PF 5% 50V**
C74	**1-161-469-00**	**CERAMIC 680P 5% 50V**
C75	**1-161-482-00**	**CERAMIC 0.068 10% 50V**
C77	**1-161-461-00**	**CERAMIC 150PF 5% 50V**
C84	**1-107-105-00**	**MICA 8PF 50V (U/C, J, BRZ)**
	1-107-103-00	**MICA 6PF 50V (AEP)**
C85	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C86	**1-161-475-00**	**CERAMIC 0.033 10% 50V**
C87	**1-161-458-00**	**CERAMIC 82PF 5% 50V**
C92	**1-161-469-00**	**CERAMIC 680PF 5% 50V**
C94	**1-161-469-00**	**CERAMIC 680PF 5% 50V**
C95	**1-161-464-00**	**CERAMIC 270PF 5% 50V**
C96	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
C97	**1-161-472-00**	**CERAMIC 0.0047 10% 50V**
C100	**1-161-475-00**	**CERAMIC 0.033 10% 50V**
C101	**1-107-077-00**	**MICA 47PF 5% 50V (AEP)**
C102	**1-107-061-00**	**MICA 10PF 5% 50V**
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555 (AEP)**
D3	**8-719-709-25**	**1S1925-P**
D4	**8-719-709-25**	**1S1925-P**
D5	**8-719-815-55**	**1S1555**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
D8	**8-719-815-55**	**1S1555**
D9	**8-719-815-55**	**1S1555**
D10	**8-719-815-55**	**1S1555**
D11	**8-719-815-55**	**1S1555**
D12	**8-719-815-55**	**1S1555**
D13	**8-719-139-07**	**RD3.9E**
D14	**8-719-139-07**	**RD3.9E**
D15	**8-719-815-55**	**1S1555 (AEP, BRZ)**
D16	**8-719-815-55**	**1S1555**
D17	**8-719-815-55**	**1S1555**
D18	**8-719-143-07**	**RD4.3E**
D20	**8-719-709-25**	**1S1925-P**

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Ref. No.	Parts No.	Description
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D24	8-719-815-55	1S1555
D25	8-719-709-25	1S1925-P
D26	8-719-709-25	1S1925-P
D27	8-719-815-55	1S1555 (AEP)
IC1	8-759-131-10	μPC311C; NEC
IC2	8-759-940-98	CD4098BE, C-MOS; RCA
IC3	8-759-240-11	TC4011BP, C-MOS (CD4011BE; RCA)
IC4	8-759-131-10	μPC311C; NEC
IC5	8-759-931-40	CA3140AT; RCA
IC6	8-759-901-07	SN74LS107N, TTL; TI
IC7	8-759-901-07	SN74LS107N, TTL; TI
IC8	8-759-969-13	SN16913P; TI
IC9	8-759-990-82	TL082CP; TI
IC10	8-759-900-07	F4027PC, C-MOS; FSC
IC11	8-759-990-82	TL082CP; TI
IC12	8-756-131-10	μPC311C; NEC
IC13	8-759-940-98	CD4098BE, C-MOS; RCA
IC14	8-759-940-98	CD4098BE, C-MOS; RCA
IC15	8-759-240-11	TC4011BP, C-MOS (CD4011BE; RCA)
IC16	8-756-131-10	μPC311C; NEC
Q1	8-724-375-01	2SC403C (U/C, J)
	8-729-612-77	2SA1027R (AEP, BRZ)
Q2	8-724-375-01	2SC403C
Q3	8-724-375-01	2SC403C
Q4	8-724-375-01	2SC403C
Q5	8-724-375-01	2SC403C
Q6	8-729-663-47	2SC1364
Q7	8-724-375-01	2SC403C
Q8	8-729-612-77	2SA1027R
Q9	8-729-612-77	2SA1027R
Q10	8-729-663-47	2SC1364
Q11	8-729-612-77	2SA1027R
Q12	8-729-612-77	2SA1027R
Q13	8-729-612-77	2SA1027R
Q14	8-729-672-43	2SC2724

Ref. No.	Parts No.	Description
Q15	8-729-672-43	2SC2724
Q16	8-729-663-47	2SC1364
Q17	8-729-900-77	J176-V
Q18	8-729-612-77	2SA1027R
Q19	8-729-364-12	2SC641K
Q20	8-729-672-43	2SC2724
Q21	8-729-672-43	2SC2724
Q22	8-729-672-43	2SC2724
Q23	8-729-672-43	2SC2724
Q24	8-729-663-47	2SC1364
Q25	8-723-305-00	2SK43-5
Q26	8-724-375-01	2SC403C
Q27	8-724-375-01	2SC403C
Q28	8-729-663-47	2SC1364
Q29	8-724-375-01	2SC403C
Q30	8-729-612-77	2SA1027R
Q31	8-729-612-77	2SA1027R
Q32	8-729-663-47	2SC1364
Q33	8-729-612-77	2SA1027R
Q35	8-729-364-12	2SC641K
Q37	8-723-305-00	2SK43-5
Q38	8-723-305-00	2SK43-5
Q39	8-724-375-01	2SC403C
R11	1-214-565-00	METAL 2.2K 1% 1/8W
R36	1-214-563-00	METAL 1.8K 1% 1/8W
R40	1-214-172-00	METAL 47K 1% 1/4W
R43	1-214-561-00	METAL 1.5K 1% 1/8W
R63	1-214-566-00	METAL 2.4K 1% 1/8W
R64	1-214-565-00	METAL 2.2K 1% 1/8W
R66	1-214-565-00	METAL 2.2K 1% 1/8W (U/C, J, BRZ)
	1-214-560-00	METAL 1.3K 1% 1/8W (AEP)
R69	1-214-561-00	METAL 1.5K 1% 1/8W
R85	1-214-582-00	METAL 11K 1% 1/8W
R86	1-214-582-00	METAL 11K 1% 1/8W
R87	1-214-582-00	METAL 11K 1% 1/8W
R88	1-214-589-00	METAL 22K 1% 1/8W
R89	1-214-589-00	METAL 22K 1% 1/8W
R101	1-214-552-00	METAL 620 1% 1/8W
R120	1-214-175-00	METAL 62K 1% 1/4W
R121	1-214-175-00	METAL 62K 1% 1/4W
R122	1-214-575-00	METAL 5.6K 1% 1/8W
R127	1-214-593-00	METAL 33K 1% 1/8W
R128	1-214-565-00	METAL 2.2K 1% 1/8W
R136	1-214-584-00	METAL 13K 1% 1/8W
R148	1-214-565-00	METAL 2.2K 1% 1/8W

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Ref. No.	Parts No.	Description
RV1	1-224-940-00	VAR, METAL 10K
RV2	1-224-942-00	VAR, METAL 50K (AEP)
RV3	1-225-154-00	VAR, WIRE WOUND 10K
RV4	1-224-940-00	VAR, METAL 10K
RV5	1-224-940-00	VAR, METAL 10K
RV6	1-225-153-00	VAR, WIRE WOUND 2K
S1	1-553-439-00	TOGGLE
S2	1-553-250-00	ROTARY
X1	1-527-478-00	VX0, 14.31818MHz (U/C, J)
	1-527-585-00	VX0, 17.7345MHz (AEP)
	1-527-798-00	VXO, 14.3024MHz (BRZ)
SW-42 BOARD		
	1-602-106-00	PRINTED CIRCUIT BOARD, "SW-42"
R1	1-246-465-00	CARBON 470 5% 1/4W
R2	1-246-487-00	CARBON 3.9K 5% 1/4W
R3	1-246-466-00	CARBON 510 5% 1/4W
R4	1-246-466-00	CARBON 510 5% 1/4W
S1	1-553-251-00	PUSH (MONITOR OUT SELECT)

Ref. No.	Parts No.	Description
VA-5 BOARD		
	A-7511-442-A	MOUNTED CIRCUIT BOARD, "VA-5"
C1	1-108-227-00	MYLAR 0.001 10% 50V
C2	1-108-242-00	MYLAR 0.022 10% 50V
C3	1-123-298-00	ELECT 470 20% 6.3V
C7	1-161-460-00	CERAMIC 120PF 5% 50V
C10	1-161-464-00	CERAMIC 270PF 5% 50V
C11	1-161-460-00	CERAMIC 120PF 5% 50V
C12	1-107-102-00	MICA 5PF 50V
C13	1-107-068-00	MICA 20PF 5% 50V
C14	1-107-081-00	MICA 68PF 5% 50V
C15	1-107-075-00	MICA 39PF 5% 50V
C16	1-161-460-00	CERAMIC 120PF 5% 50V
C17	1-107-070-00	MICA 24PF 5% 50V
C21	1-107-072-00	MICA 30PF 5% 50V
C22	1-107-079-00	MICA 56PF 5% 50V
C29	1-108-227-00	MYLAR 0.001 10% 50V
C30	1-108-242-00	MYLAR 0.022 10% 50V
C31	1-123-298-00	ELECT 470 20% 6.3V
C35	1-161-460-00	CERAMIC 120PF 5% 50V
C38	1-161-464-00	CERAMIC 270PF 5% 50V
C39	1-161-460-00	CERAMIC 120PF 5% 50V
C40	1-107-102-00	MICA 5PF 50V
C41	1-107-068-00	MICA 20PF 5% 50V
C42	1-107-081-00	MICA 68PF 5% 50V
C43	1-107-075-00	MICA 39PF 5% 50V
C44	1-161-460-00	CERAMIC 120PF 5% 50V
C45	1-107-070-00	MICA 24PF 5% 50V
C49	1-107-072-00	MICA 30PF 5% 50V
C50	1-107-079-00	MICA 56PF 5% 50V
C57	1-108-227-00	MYLAR 0.001 10% 50V
C58	1-108-242-00	MYLAR 0.022 10% 50V
C59	1-123-298-00	ELECT 470 20% 6.3V
C63	1-161-460-00	CERAMIC 120PF 5% 50V
C66	1-161-464-00	CERAMIC 270PF 5% 50V
C67	1-161-460-00	CERAMIC 120PF 5% 50V
C68	1-107-102-00	MICA 5PF 50V
C69	1-107-068-00	MICA 20PF 5% 50V
C70	1-107-081-00	MICA 68PF 5% 50V
C71	1-107-075-00	MICA 39PF 5% 50V
C72	1-161-460-00	CERAMIC 120PF 5% 50V
C73	1-107-070-00	MICA 24PF 5% 50V

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Ref. No.	Parts No.	Description
C77	1-107-072-00	MICA 30PF 5% 50V
C78	1-107-079-00	MICA 56PF 5% 50V
C91	1-107-106-00	MICA 9PF 50V
C94	1-107-069-00	MICA 22PF 5% 50V
C96	1-107-100-00	MICA 3PF 50V
C98	1-107-099-00	MICA 2PF 5% 50V
C99	1-107-099-00	MICA 2PF 5% 50V
C100	1-107-099-00	MICA 2PF 5% 50V
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	8-719-136-17	RD3.6E-BZ8
D2	8-719-815-55	1S1555
D3	8-719-182-07	RD8.2E
D4	8-719-182-07	RD8.2E
D5	8-719-136-17	RD3.6E-BZ8
D6	8-719-815-55	1S1555
D7	8-719-182-07	RD8.2E
D8	8-719-182-07	RD8.2E
D9	8-719-136-17	RD3.6E-BZ8
D10	8-719-815-55	1S1555
D11	8-719-182-07	RD8.2E
D12	8-719-182-07	RD8.2E
D13	8-719-815-55	1S1555
D14	8-719-815-55	1S1555
D15	8-719-815-55	1S1555
D16	8-719-815-55	1S1555
D17	8-719-815-55	1S1555
D18	8-719-815-55	1S1555
D19	8-719-815-55	1S1555
D20	8-719-815-55	1S1555
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D24	8-719-815-55	1S1555
D25	8-719-815-55	1S1555
D26	8-719-815-55	1S1555
D27	8-719-815-55	1S1555
D28	8-719-175-07	RD7.5E
D29	8-719-191-07	RD9.1E
D30	8-719-191-07	RD9.1E
D31	8-719-191-07	RD9.1E
IC1	8-743-150-00	BX-315A

Ref. No.	Parts No.	Description
Q1	8-729-671-15	2SC710-15
Q2	8-729-671-15	2SC710-15
Q3	8-729-671-15	2SC710-15
Q4	8-729-671-15	2SC710-15
Q5	8-729-671-15	2SC710-15
Q6	8-765-450-20	2SK125
Q7	8-765-450-20	2SK125
Q8	8-765-450-20	2SK125
Q9	8-729-671-15	2SC710-15
Q10	8-765-450-20	2SK125
Q11	8-765-450-20	2SK125
Q12	8-729-671-15	2SC710-15
Q13	8-729-671-15	2SC710-15
Q14	8-765-450-20	2SK125
Q15	8-765-450-20	2SK125
Q16	8-765-450-20	2SK125
Q17	8-729-671-15	2SC710-15
Q18	8-729-612-77	2SA1027R
Q19	8-729-663-47	2SC1364
Q20	8-729-663-47	2SC1364
Q21	8-729-612-77	2SA1027R
Q22	8-729-663-47	2SC1364
Q23	8-729-663-47	2SC1364
Q24	8-729-671-15	2SC710-15
Q25	8-729-671-15	2SC710-15
Q26	8-729-671-15	2SC710-15
Q27	8-729-671-15	2SC710-15
Q28	8-729-671-15	2SC710-15
Q29	8-765-450-20	2SK125
Q30	8-765-450-20	2SK125
Q31	8-765-450-20	2SK125
Q32	8-729-671-15	2SC710-15
Q33	8-765-450-20	2SK125
Q34	8-765-450-20	2SK125
Q35	8-729-671-15	2SC710-15
Q36	8-729-671-15	2SC710-15
Q37	8-765-450-20	2SK125
Q38	8-765-450-20	2SK125
Q39	8-765-450-20	2SK125
Q40	8-729-671-15	2SC710-15
Q41	8-729-612-77	2SA1027R
Q42	8-729-663-47	2SC1364
Q43	8-729-663-47	2SC1364
Q44	8-729-612-77	2SA1027R
Q45	8-729-663-47	2SC1364
Q46	8-729-663-47	2SC1364

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Ref. No.	Parts No.	Description
Q47	8-729-671-15	2SC710-15
Q48	8-729-671-15	2SC710-15
Q49	8-729-671-15	2SC710-15
Q50	8-729-671-15	2SC710-15
Q51	8-729-671-15	2SC710-15
Q52	8-765-450-20	2SK125
Q53	8-765-450-20	2SK125
Q54	8-765-450-20	2SK125
Q55	8-729-671-15	2SC710-15
Q56	8-765-450-20	2SK125
Q57	8-765-450-20	2SK125
Q58	8-729-671-15	2SC710-15
Q59	8-729-671-15	2SC710-15
Q60	8-765-450-20	2SK125
Q61	8-765-450-20	2SK125
Q62	8-765-450-20	2SK125
Q63	8-729-671-15	2SC710-15
Q64	8-729-612-77	2SA1027R
Q65	8-729-663-47	2SC1364
Q66	8-729-663-47	2SC1364
Q67	8-729-612-77	2SA1027R
Q68	8-729-663-47	2SC1364
Q69	8-729-663-47	2SC1364
Q70	8-765-450-20	2SK125
Q71	8-729-663-47	2SC1364
Q72	8-765-450-20	2SK125
Q73	8-729-663-47	2SC1364
Q74	8-765-450-20	2SK125
Q75	8-729-663-47	2SC1364
Q76	8-765-450-20	2SK125
Q77	8-765-450-20	2SK125
Q78	8-729-663-47	2SC1364
Q79	8-765-450-20	2SK125
Q80	8-765-450-20	2SK125
Q81	8-729-663-47	2SC1364
Q82	8-765-450-20	2SK125
Q83	8-729-663-47	2SC1364
Q84	8-765-450-20	2SK125
Q85	8-729-663-47	2SC1364
Q86	8-729-663-47	2SC1364
Q87	8-765-450-20	2SK125
Q88	8-729-612-77	2SA1027R
Q89	8-765-450-20	2SK125
Q90	8-729-663-47	2SC1364
Q91	8-729-612-77	2SA1027R

Ref. No.	Parts No.	Description
Q92	8-729-364-12	2SC641K
Q93	8-765-450-20	2SK125
R1	1-214-530-00	METAL 75 1% 1/8W
R4	1-214-554-00	METAL 750 1% 1/8W
R6	1-214-571-00	METAL 3.9K 1% 1/8W
R7	1-214-561-00	METAL 1.5K 1% 1/8W
R9	1-214-557-00	METAL 1K 1% 1/8W
R12	1-214-568-00	METAL 3.0K 1% 1/8W
R16	1-214-580-00	METAL 9.1K 1% 1/8W
R18	1-214-549-00	METAL 470 1% 1/8W
R19	1-214-548-00	METAL 430 1% 1/8W
R20	1-214-539-00	METAL 180 1% 1/8W
R22	1-214-554-00	METAL 750 1% 1/8W
R24	1-214-553-00	METAL 680 1% 1/8W
R31	1-214-591-00	METAL 27K 1% 1/8W
R33	1-214-587-00	METAL 18K 1% 1/8W
R34	1-214-565-00	METAL 2.2K 1% 1/8W
R37	1-214-588-00	METAL 20K 1% 1/8W
R42	1-214-568-00	METAL 3K 1% 1/8W
R43	1-214-564-00	METAL 2K 1% 1/8W
R45	1-214-557-00	METAL 1K 1% 1/8W
R46	1-214-556-00	METAL 910 1% 1/8W
R47	1-214-543-00	METAL 270 1% 1/8W
R48	1-214-576-00	METAL 6.2K 1% 1/8W
R49	1-214-531-00	METAL 82 1% 1/8W
R50	1-214-568-00	METAL 3K 1% 1/8W
R51	1-214-567-00	METAL 2.7K 1% 1/8W
R60	1-214-591-00	METAL 27K 1% 1/8W
R64	1-214-530-00	METAL 75 1% 1/8W
R69	1-214-530-00	METAL 75 1% 1/8W
R72	1-214-530-00	METAL 75 1% 1/8W
R75	1-214-554-00	METAL 750 1% 1/8W
R77	1-214-571-00	METAL 3.9K 1% 1/8W
R78	1-214-561-00	METAL 1.5K 1% 1/8W
R80	1-214-557-00	METAL 1K 1% 1/8W
R83	1-214-568-00	METAL 3K 1% 1/8W
R87	1-214-580-00	METAL 9.1K 1% 1/8W
R89	1-214-549-00	METAL 470 1% 1/8W
R90	1-214-548-00	METAL 430 1% 1/8W
R91	1-214-539-00	METAL 180 1% 1/8W
R93	1-214-554-00	METAL 750 1% 1/8W
R95	1-214-553-00	METAL 680 1% 1/8W

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Ref. No.	Parts No.	Description
R102	1-214-591-00	METAL 27K 1% 1/8W
R104	1-214-587-00	METAL 18K 1% 1/8W
R105	1-214-565-00	METAL 2.2K 1% 1/8W
R108	1-214-588-00	METAL 20K 1% 1/8W
R113	1-214-568-00	METAL 3K 1% 1/8W
R114	1-214-564-00	METAL 2K 1% 1/8W
R116	1-214-557-00	METAL 1K 1% 1/8W
R117	1-214-556-00	METAL 910 1% 1/8W
R118	1-214-543-00	METAL 270 1% 1/8W
R119	1-214-576-00	METAL 6.2K 1% 1/8W
R120	1-214-531-00	METAL 82 1% 1/8W
R121	1-214-568-00	METAL 3K 1% 1/8W
R122	1-214-567-00	METAL 2.7K 1% 1/8W
R131	1-214-591-00	METAL 27K 1% 1/8W
R135	1-214-530-00	METAL 75 1% 1/8W
R140	1-214-530-00	METAL 75 1% 1/8W
R143	1-214-530-00	METAL 75 1% 1/8W
R146	1-214-554-00	METAL 750 1% 1/8W
R148	1-214-571-00	METAL 3.9K 1% 1/8W
R149	1-214-561-00	METAL 1.5K 1% 1/8W
R151	1-214-557-00	METAL 1K 1% 1/8W
R154	1-214-568-00	METAL 3K 1% 1/8W
R158	1-214-580-00	METAL 9.1K 1% 1/8W
R160	1-214-549-00	METAL 470 1% 1/8W
R161	1-214-548-00	METAL 430 1% 1/8W
R162	1-214-539-00	METAL 180 1% 1/8W
R164	1-214-554-00	METAL 750 1% 1/8W
R166	1-214-553-00	METAL 680 1% 1/8W
R173	1-214-591-00	METAL 27K 1% 1/8W
R175	1-214-587-00	METAL 18K 1% 1/8W
R176	1-214-565-00	METAL 2.2K 1% 1/8W
R179	1-214-588-00	METAL 20K 1% 1/8W
R184	1-214-568-00	METAL 3K 1% 1/8W
R185	1-214-564-00	METAL 2K 1% 1/8W
R187	1-214-557-00	METAL 1K 1% 1/8W
R188	1-214-556-00	METAL 910 1% 1/8W
R189	1-214-543-00	METAL 270 1% 1/8W
R190	1-214-576-00	METAL 6.2K 1% 1/8W
R191	1-214-531-00	METAL 82 1% 1/8W
R192	1-214-568-00	METAL 3K 1% 1/8W
R193	1-214-567-00	METAL 2.7K 1% 1/8W
R202	1-214-591-00	METAL 27K 1% 1/8W
R206	1-214-530-00	METAL 75 1% 1/8W
R211	1-214-530-00	METAL 75 1% 1/8W
R216	1-214-557-00	METAL 1K 1% 1/8W

Ref. No.	Parts No.	Description
R219	1-214-550-00	METAL 510 1% 1/8W
R221	1-214-557-00	METAL 1K 1% 1/8W
R223	1-214-557-00	METAL 1K 1% 1/8W
R225	1-214-550-00	METAL 510 1% 1/8W
R227	1-214-557-00	METAL 1K 1% 1/8W
R229	1-214-557-00	METAL 1K 1% 1/8W
R231	1-214-550-00	METAL 510 1% 1/8W
R233	1-214-557-00	METAL 1K 1% 1/8W
R235	1-214-557-00	METAL 1K 1% 1/8W
R237	1-214-550-00	METAL 510 1% 1/8W
R240	1-214-557-00	METAL 1K 1% 1/8W
R242	1-214-564-00	METAL 1K 1% 1/8W
R243	1-214-566-00	METAL 2.4K 1% 1/8W
R244	1-214-570-00	METAL 3.6K 1% 1/8W
R246	1-214-593-00	METAL 33K 1% 1/8W
R248	1-214-550-00	METAL 510 1% 1/8W
R257	1-214-590-00	METAL 24K 1% 1/8W
R260	1-214-557-00	METAL 1K 1% 1/8W
R261	1-214-557-00	METAL 1K 1% 1/8W
R262	1-214-568-00	METAL 3K 1% 1/8W
R263	1-214-530-00	METAL 75 1% 1/8W
R264	1-214-571-00	METAL 3.9K 1% 1/8W
R265	1-214-564-00	METAL 2K 1% 1/8W
R266	1-214-564-00	METAL 2K 1% 1/8W
R267	1-214-564-00	METAL 2K 1% 1/8W
R268	1-214-558-00	METAL 1.1K 1% 1/8W
R269	1-214-558-00	METAL 1.1K 1% 1/8W
R270	1-214-558-00	METAL 1.1K 1% 1/8W
RV1	1-224-936-00	VAR, METAL 500
RV2	1-224-934-00	VAR, METAL 100
RV3	1-224-936-00	VAR, METAL 500
RV4	1-224-934-00	VAR, METAL 100
RV5	1-224-936-00	VAR, METAL 500
RV6	1-224-934-00	VAR, METAL 100
RV7	1-224-938-00	VAR, METAL 2K
RV8	1-224-940-00	VAR, METAL 10K
RV9	1-224-938-00	VAR, METAL 2K
RV10	1-224-940-00	VAR, METAL 10K
RV11	1-224-938-00	VAR, METAL 2K
RV12	1-224-940-00	VAR, METAL 10K

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Ref. No.	Parts No.	Description
VA-6 BOARD		
	A-7511-443-A	MOUNTED CIRCUIT BOARD, "VA-6"
C1	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C2	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C3	**1-123-298-00**	**ELECT 470 20% 6.3V**
C8	**1-161-463-00**	**CERAMIC 220PF 5% 50V**
C9	**1-161-465-00**	**CERAMIC 330PF 5% 50V**
C10	**1-161-461-00**	**CERAMIC 150PF 5% 50V**
C13	**1-107-100-00**	**MICA 3PF 50V**
C15	**1-161-463-00**	**CERAMIC 220PF 5% 50V**
C16	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C17	**1-107-075-00**	**MICA 39PF 5% 50V**
C19	**1-107-076-00**	**MICA 43PF 5% 50V**
C20	**1-107-079-00**	**MICA 56PF 5% 50V**
C21	**1-107-070-00**	**MICA 24PF 5% 50V**
C28	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C29	**1-107-101-00**	**MICA 4PF 50V**
C32	**1-161-469-00**	**CERAMIC 680PF 5% 50V**
C33	**1-161-466-00**	**CERAMIC 390PF 5% 50V**
C40	**1-107-101-00**	**MICA 4PF 50V**
C43	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C44	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C48	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C50	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C57	**1-107-065-00**	**MICA 15PF 5% 50V**
C58	**1-123-298-00**	**ELECT 470 20% 6.3V**
C60	**1-161-463-00**	**CERAMIC 220PF 5% 50V**
C69	**1-107-070-00**	**MICA 24PF 5% 50V**
C72	**1-107-077-00**	**MICA 47PF 5% 50V**
C73	**1-107-080-00**	**MICA 62PF 5% 50V**
C76	**1-161-483-00**	**CERAMIC 0.1 10% 50V**
C77	**1-107-068-00**	**MICA 20PF 5% 50V**
C79	**1-107-076-00**	**MICA 43PF 5% 50V**
CN1	1-561-131-00	RECEPTACLE, MALE, 37P
D1	**8-719-136-17**	**RD3.6E-BZ8**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-182-07**	**RD8.2E**
D4	**8-719-182-07**	**RD8.2E**
D5	**8-719-136-17**	**RD3.6E-BZ8**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-182-07**	**RD8.2E**
D8	**8-719-815-55**	**1S1555**
D9	**8-719-182-07**	**RD8.2E**
D10	**8-719-191-07**	**RD9.1E**
D11	**8-719-110-07**	**RD10E**
DL1	**1-415-206-00**	**300 ns**
FB1~ FB4	**1-543-085-00**	
IC1	**8-759-990-82**	**TL082CP; TI**
IC2	**8-743-150-00**	**BX-315A**
IC3	**8-759-906-07**	**TL607CP; TI**
IC4	**8-743-150-00**	**BX-315A**
IC5	**8-759-907-93**	**μA796HCB; FSC**
Q1	**8-729-671-15**	**2SC710-15**
Q2	**8-729-671-15**	**2SC710-15**
Q3	**8-729-663-47**	**2SC1364**
Q4	**8-765-530-00**	**2SC2549**
Q5	**8-765-530-00**	**2SC2549**
Q6	**8-765-450-20**	**2SK125**
Q7	**8-765-450-20**	**2SK125**
Q8	**8-765-450-20**	**2SK125**
Q9	**8-729-671-15**	**2SC710-15**
Q10	**8-765-450-20**	**2SK125**
Q11	**8-765-450-20**	**2SK125**
Q12	**8-765-530-00**	**2SC2549**
Q13	**8-765-530-00**	**2SC2549**
Q14	**8-765-450-20**	**2SK125**
Q15	**8-765-450-20**	**2SK125**
Q16	**8-765-450-20**	**2SK125**
Q17	**8-729-671-15**	**2SC710-15**
Q18	**8-729-612-77**	**2SA1027R**
Q19	**8-729-663-47**	**2SC1364**
Q20	**8-729-663-47**	**2SC1364**
Q21	**8-729-612-77**	**2SA1027R**
Q22	**8-729-663-47**	**2SC1364**
Q23	**8-729-663-47**	**2SC1364**
Q24	**8-729-663-47**	**2SC1364**
Q25	**8-729-612-77**	**2SA1027R**
Q26	**8-765-222-20**	**2SC1963**
Q27	**8-729-663-47**	**2SC1364**
Q28	**8-765-020-00**	**2SA884**
Q29	**8-729-364-12**	**2SC641K**
Q30	**8-729-663-47**	**2SC1364**

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Ref. No.	Parts No.	Description
Q31	8-729-612-77	2SA1027R
Q32	8-729-671-15	2SC710-15
Q33	8-729-671-15	2SC710-15
Q34	8-729-612-77	2SA1027R
Q35	8-729-663-47	2SC1364
Q36	8-729-384-48	2SA844
Q37	8-729-384-48	2SA844
Q38	8-729-663-47	2SC1364
Q39	8-729-663-47	2SC1364
Q40	8-729-671-15	2SC710-15
Q41	8-729-671-15	2SC710-15
Q42	8-765-450-20	2SK125
Q43	8-765-450-20	2SK125
Q44	8-765-450-20	2SK125
Q45	8-729-671-15	2SC710-15
Q48	8-729-671-15	2SC710-15
Q49	8-729-671-15	2SC710-15
Q50	8-765-450-20	2SK125
Q51	8-765-450-20	2SK125
Q52	8-765-450-20	2SK125
Q53	8-729-671-15	2SC710-15
Q54	8-729-612-77	2SA1027R
Q55	8-729-663-47	2SC1364
Q56	8-729-663-47	2SC1364
Q57	8-729-612-77	2SA1027R
Q58	8-729-663-47	2SC1363
Q59	8-729-663-47	2SC1363
R1	1-214-530-00	METAL 75 1% 1/8W
R5	1-214-554-00	METAL 750 1% 1/8W
R6	1-214-571-00	METAL 3.9K 1% 1/8W
R7	1-214-561-00	METAL 1.5K 1% 1/8W
R11	1-214-557-00	METAL 1K 1% 1/8W
R12	1-214-568-00	METAL 3K 5% 1/8W
R13	1-214-564-00	METAL 2K 1% 1/8W
R17	1-214-572-00	METAL 4.3K 1% 1/8W
R18	1-214-558-00	METAL 1.1K 1% 1/8W
R20	1-214-549-00	METAL 470 1% 1/8W
R21	1-214-548-00	METAL 430 1% 1/8W
R22	1-214-539-00	METAL 180 1% 1/8W
R28	1-214-509-00	METAL 10 1% 1/8W
R29	1-214-551-00	METAL 560 1% 1/8W
R30	1-214-589-00	METAL 22K 1% 1/8W
R31	1-214-587-00	METAL 18K 1% 1/8W
R32	1-214-565-00	METAL 2.2K 1% 1/8W
R35	1-214-588-00	METAL 20K 1% 1/8W
R41	1-214-564-00	METAL 2K 1% 1/8W
R42	1-214-568-00	METAL 3K 5% 1/8W
R46	1-214-559-00	METAL 1.2K 1% 1/8W
R47	1-214-557-00	METAL 1K 1% 1/8W
R48	1-214-556-00	METAL 910 1% 1/8W
R49	1-214-543-00	METAL 270 1% 1/8W
R50	1-214-531-00	METAL 82 1% 1/8W
R58	1-214-533-00	METAL 100 1% 1/8W
R59	1-214-566-00	METAL 2.4K 1% 1/8W
R60	1-214-589-00	METAL 22K 1% 1/8W
R66	1-214-530-00	METAL 75 1% 1/8W
R67	1-214-552-00	METAL 620 1% 1/8W
R72	1-214-552-00	METAL 620 1% 1/8W
R73	1-214-530-00	METAL 75 1% 1/8W
R74	1-214-557-00	METAL 1K 1% 1/8W
R75	1-214-552-00	METAL 620 1% 1/8W
R79	1-214-578-00	METAL 7.5K 1% 1/8W
R80	1-214-561-00	METAL 1.5K 1% 1/8W
R84	1-214-569-00	METAL 3.3K 1% 1/8W
R91	1-214-550-00	METAL 510 1% 1/8W
R92	1-214-550-00	METAL 510 1% 1/8W
R95	1-214-530-00	METAL 75 1% 1/8W
R96	1-214-577-00	METAL 6.8K 1% 1/8W
R97	1-214-579-00	METAL 8.2K 1% 1/8W
R108	1-214-561-00	METAL 1.5K 1% 1/8W
R112	1-214-567-00	METAL 2.7K 1% 1/8W
R113	1-214-552-00	METAL 620 1% 1/8W
R114	1-214-530-00	METAL 75 1% 1/8W
R115	1-214-530-00	METAL 75 1% 1/8W
R118	1-214-554-00	METAL 750 1% 1/8W
R120	1-214-571-00	METAL 3.9K 1% 1/8W
R123	1-214-561-00	METAL 1.5K 1% 1/8W
R129	1-214-578-00	METAL 7.5K 1% 1/8W
R132	1-214-569-00	METAL 3.3K 1% 1/8W
R133	1-214-567-00	METAL 2.7K 1% 1/8W
R135	1-214-574-00	METAL 5.1K 1% 1/8W
R136	1-214-557-00	METAL 1K 1% 1/8W
R137	1-214-533-00	METAL 100 1% 1/8W
R138	1-214-533-00	METAL 100 1% 1/8W
R141	1-214-571-00	METAL 3.9K 1% 1/8W
R143	1-214-557-00	METAL 1K 1% 1/8W
R148	1-214-552-00	METAL 620 1% 1/8W
R149	1-214-543-00	METAL 270 1% 1/8W
R150	1-214-574-00	METAL 5.1K 1% 1/8W
R151	1-214-557-00	METAL 1K 1% 1/8W
R156	1-214-558-00	METAL 1.1K 1% 1/8W
R157	1-214-576-00	METAL 6.2K 1% 1/8W

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R158	**1-214-548-00**	**METAL 430 1% 1/8W**
R159	**1-214-539-00**	**METAL 180 1% 1/8W**
R161	**1-214-559-00**	**METAL 1.2K 1% 1/8W**
R162	**1-214-556-00**	**METAL 910 1% 1/8W**
R170	**1-214-591-00**	**METAL 27K 1% 1/8W**
R175	**1-214-565-00**	**METAL 2.2K 1% 1/8W**
R185	**1-214-557-00**	**METAL 1K 1% 1/8W**
R186	**1-214-576-00**	**METAL 6.2K 1% 1/8W**
R187	**1-214-556-00**	**METAL 910 1% 1/8W**
R188	**1-214-543-00**	**METAL 270 1% 1/8W**
R189	**1-214-531-00**	**METAL 82 1% 1/8W**
R190	**1-214-555-00**	**METAL 820 1% 1/8W**
R195	**1-214-570-00**	**METAL 3.6K 1% 1/8W**
R197	**1-214-564-00**	**METAL 2K 1% 1/8W**
R203	**1-214-530-00**	**METAL 75 1% 1/8W**
R204	**1-214-591-00**	**METAL 27K 1% 1/8W**
R205	**1-214-549-00**	**METAL 470 1% 1/8W**
R210	**1-214-530-00**	**METAL 75 1% 1/8W**
RV1	**1-224-936-00**	**VAR, METAL 500**
RV2	**1-224-934-00**	**VAR, METAL 100**
RV3	**1-224-936-00**	**VAR, METAL 500**
RV4	**1-224-936-00**	**VAR, METAL 500**
RV5	**1-224-940-00**	**VAR, METAL 10K**
RV6	**1-224-934-00**	**VAR, METAL 100**
RV7	**1-224-937-00**	**VAR, METAL 1K**
RV8	**1-224-936-00**	**VAR, METAL 500**
RV9	**1-224-940-00**	**VAR, METAL 10K**
RV10	**1-224-935-00**	**VAR, METAL 200**
RV11	**1-224-937-00**	**VAR, METAL 1K**
RV12	**1-224-936-00**	**VAR, METAL 500**
RV13	**1-224-930-00**	**VAR, METAL 10K**
RV14	**1-224-937-00**	**VAR, METAL 1K**
RV15	**1-224-934-00**	**VAR, METAL 100**
RV16	**1-224-938-00**	**VAR, METAL 2K**
RV17	**1-224-939-00**	**VAR, METAL 5K**
S1	**1-553-439-00**	**TOGGLE**

Ref. No.	Parts No.	Description
FRAME		**– CAMERA CONTROL UNIT –**
	⚠A-7581-016-B	**POWER ASS'Y (for U/C, J, PM) (inc. SWITCHING REGULATOR)** **USA/CND, PM 10001 & HIGHER** **J 15001 & HIGHER**
	⚠A-7581-017-B	**POWER ASS'Y (for PAL) (inc. SWITCHING REGULATOR)** **10001 & HIGHER**
	⚠1-413-047-13	**SWITCHING REGULATOR (for U/C, J, PM)** **USA/CND 10301 & HIGHER** **J 15301 & HIGHER** **PM 10001 & HIGHER**
	⚠1-413-047-23	**SWITCHING REGULATOR (for PAL)** **10501 & HIGHER**
C1	**1-161-025-00**	**CERAMIC 0.1 10% 25V**
C2	**1-161-025-00**	**CERAMIC 0.1 10% 25V**
CN1	1-561-038-00	PLUG, HOUSING, FEMALE, 37P; FOR PW-47 BOARD, CN1
	1-508-944-00	PIN, INDEX
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**
CN2	1-561-038-00	PLUG, HOUSING, FEMALE, 37P; FOR SG-31/31A BOARD, CN1
	1-508-944-00	PIN, INDEX
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**
CN3	1-561-038-00	PLUG, HOUSING, FEMALE, 37P; FOR VA-5 BOARD, CN1
	1-508-944-00	PIN, INDEX
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**
CN4	1-561-038-00	PLUG, HOUSING, FEMALE, 37P; FOR VA-6 BOARD, CN1
	1-508-944-00	PIN, INDEX
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**
CN5	1-561-038-00	PLUG, HOUSING, FEMALE, 37P; FOR AU-14 BOARD, CN1
	1-508-944-00	PIN, INDEX
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**

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CN6	**1-509-176-00**	**RECEPTACLE, MALE, XLR-3P; MIC OUT (AEP, U/C, BRZ)**
	1-509-184-00	**RECEPTACLE, FEMALE, XLR-3P; MIC OUT (J)**
CN7	**1-509-177-00**	**RECEPTACLE, MALE, XLR-4P; DC IN**
CN8	**1-509-176-00**	**RECEPTACLE, MALE, XLR-3P; PGM AUDIO IN (J)**
	1-509-184-00	**RECEPTACLE, FEMALE, XLR-3P; PGM AUDIO IN (AEP, U/C, BRZ)**
CN9	**1-509-181-00**	**RECEPTACLE, MALE, XLR-7P; TALLY/INCOM**
CN10	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; VIDEO OUT, VBS**
CN11	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; GEN LOCK IN**
CN12	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; RETURN VIDEO IN**
CN13	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; VIDEO OUT, VBS/VB**
CN14	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; GEN LOCK IN**
CN15	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; RETURN VIDEO IN**
CN16	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; VIDEO OUT, R**
CN17	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; VIDEO OUT, B**
CN18	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; VIDEO OUT, G**
CN19	**1-561-053-00**	**RECEPTACLE, FEMALE, BNC; MONITOR OUT**
⚠ **CN20**	**1-509-547-00**	**AC INLET (AEP, U/C, BRZ)**
	1-509-801-00	**AC INLET (J)**
CN21	**1-508-551-00**	**RECEPTACLE, FEMALE, 16P; WAVEFORM OUT**
CN22	**1-561-482-00**	**RECEPTACLE, FEMALE, 41P; CAMERA CONNECTOR**
CN23	**1-561-250-00**	**RECEPTACLE, FEMALE, 24P; REMOTE**
D1	**8-719-907-03**	**BD703G, LED, GREEN; PILOT LAMP**

Ref. No.	Parts No.	Description
J1	**1-507-676-00**	**JACK, PHONE; PGM**
J2	**1-507-676-00**	**JACK, PHONE; INCOM**
R1	**1-246-453-00**	**CARBON, 150, 5% 1/4W**
R2	**1-246-453-00**	**CARBON, 150, 5% 1/4W**
RV1	**1-226-809-00**	**VAR, SOLID, 5K; INCOM**
RV2	**1-226-809-00**	**VAR, SOLID, 5K; PGM**
RV3	**1-224-981-00**	**VAR, METAL, 5K; R. PED**
RV4	**1-224-981-00**	**VAR, METAL, 5K; B. PED**
RV5	**1-224-981-00**	**VAR, METAL, 5K; G. GAIN**
RV6	**1-224-981-00**	**VAR, METAL, 5K; B. GAIN**
RV7	**1-224-981-00**	**VAR, METAL, 5K; R.V. CENT**
RV8	**1-224-981-00**	**VAR, METAL, 5K; B.H. CENT**
RV9	**1-224-981-00**	**VAR, METAL, 5K; B.V. CENT**
RV10	**1-224-981-00**	**VAR, METAL, 5K; R.H. CENT**
RV11	**1-226-786-00**	**VAR, METAL, 10K; IRIS**
RV12	**1-226-786-00**	**VAR, METAL, 10K; MASTER PED**
S1	**1-553-244-00**	**TOGGLE; DETAIL ON/OFF**
S2	**1-553-245-00**	**TOGGLE; INCOM COMM/PRIV**
S3	**1-553-249-00**	**TOGGLE; MODE CAM/TEST**
S4	**1-553-249-00**	**TOGGLE; GAIN 0dB/18dB**
S5	**1-553-248-00**	**TOGGLE; W&B BAL WHITE/ BLACK**
S6	**1-553-244-00**	**TOGGLE; W&B BAL AUTO/ MANU**
S7	**1-553-244-00**	**TOGGLE; IRIS AUTO/MANU**
S8	**1-553-243-00**	**ROTARY; CABLE COMP**
⚠ **S9**	**1-516-379-00**	**ROCKER; POWER**
S10	**1-552-200-00**	**PUSH; CALL**
S11	**1-553-246-00**	**TOGGLE; POWER DC/AC**
⚠ **S12**	**1-526-572-00**	**VOLTAGE SELECTOR**
T1	**1-427-348-00**	**OUTPUT; MIC OUT**
T2	**1-426-037-00**	**INPUT; MIC IN**

NOTES:

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CCU ADAPTOR

AU-15 BOARD
S/N: Up to 18100 (J)
S/N: Up to 11900 (U/C)
S/N: Up to 12700 (AEP)
S/N: Up to 10405 (BRZ)

Ref. No.	Parts No.	Description
	⚠A-7511-450-A	MOUNTED CIRCUIT BOARD, "AU-15"
C15	**1-107-061-00**	
C19	**1-108-563-00**	**MYLAR 0.0022 10% 50V**
⚠C21	**1-131-395-00**	**TANTALUM 100 20% 3.15V**
C22	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C23	**1-123-310-00**	**ELECT 470MF 10V**
CN3	1-508-931-00	RECEPTACLE, MALE, 16P
	1-561-035-00	PLUG, HOUSING, FEMALE, 16P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN4	1-560-334-00	RECEPTACLE, MALE, 10P
	1-561-177-00	PLUG, HOUSING, FEMALE, 10P
	1-508-944-00	PIN, INDEX
	1-561-054-00	CONTACT, FEMALE
CN6	1-508-932-00	RECEPTACLE, MALE, 14P
	1-561-036-00	PLUG, HOUSING, FEMALE, 14P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
D1	**8-719-111-07**	**RD11E-B**
D2	**8-719-815-55**	**1S1555**
⚠D3	**8-719-116-08**	**RD16E-B1Z7**
D4	**8-719-815-55**	**1S1555**
IC1	**8-759-990-84**	**TL084CN; TI**
IC2	**8-759-938-71**	**LM387N; NSC**
IC3	**8-759-990-72**	**TL072CP; TI**
IC4	**8-759-906-07**	**TL607CP; TI**
Q1	**8-760-413-10**	**2SC1475**
Q2	**8-729-671-15**	**2SC710-15**
Q3	**8-724-375-01**	**2SC403C**
Q4	**8-724-375-01**	**2SC403C**
R32	**1-214-530-00**	**METAL 75 1% 1/8W**
⚠R43	**1-246-778-00**	**CARBON 390 5% 1/8W**
⚠R44	**1-246-477-00**	**CARBON 1.5 5% 1/4W**
T1	**1-426-039-00**	**INPUT**
T2	**1-427-270-XX**	**OUTPUT**

AU-15 BOARD
S/N: 18101 and higher (J)
S/N: 11901 and higher (U/C)
S/N: 12701 and higher (AEP)
S/N: 10406 and higher (BRZ)

Ref. No.	Parts No.	Description
	⚠A-7511-450-B	MOUNTED CIRCUIT BOARD, "AU-15"
C15	**1-107-061-00**	**MICA 10PF 5% 50V**
⚠C21	**1-131-395-00**	**TANTALUM 100 10% 3.15V**
C22	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C23	**1-130-479-00**	**MYLAR 0.0047 5% 50V**
C24	**1-130-018-00**	**MYLAR 0.001 10% 50V**
C25	**1-161-025-00**	**CERAMIC 0.1 10% 50V**
CN3	1-508-931-00	RECEPTACLE, MALE, 16P
	1-561-035-00	PLUG, HOUSING, FEMALE, 16P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN4	1-560-334-00	RECEPTACLE, MALE, 10P
	1-561-177-00	PLUG, HOUSING, FEMALE, 10P
	1-508-944-00	PIN, INDEX
	1-561-054-00	CONTACT, FEMALE
CN6	1-508-932-00	RECEPTACLE, MALE, 14P
	1-561-036-00	PLUG, HOUSING, FEMALE, 14P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
D1	**8-719-111-07**	**RD11E-B**
D2	**8-719-815-55**	**1S1555**
⚠D3	**8-719-116-08**	**RD16E-B1Z7**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-111-07**	**RD11E-B**
IC1	**8-759-745-60**	**NJM4560D (JRC)**
IC2	**8-759-745-60**	**NJM4560D (JRC)**
IC3	**8-759-745-60**	**NJM4560D (JRC)**
IC4	**8-759-906-07**	**TL607CP (TI)**
IC5	**8-759-145-58**	**μPC4558C (NEC)**
Q1	**8-729-609-06**	**2SC1209**
Q2	**8-729-671-15**	**2SC710-15**
Q3	**8-724-375-01**	**2SC403C**
Q4	**8-724-375-01**	**2SC403C**
Q11	**8-729-609-06**	**2SC1209**
R32	**1-214-530-00**	**METAL 75 1% 1/8W**
⚠R43	**1-246-778-00**	**CARBON 390 5% 1/8W**
⚠R44	**1-246-477-00**	**CARBON 1.5K 5% 1/4W**
T1	**1-426-039-00**	**INPUT**
T2	**1-427-270-XX**	**OUTPUT**

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Ref. No.	Parts No.	Description
CO-5 BOARD		
	A-7511-449-A	MOUNTED CIRCUIT BOARD, "CO-5"
C4	**1-107-103-00**	**MICA 6PF 50V**
C5	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C7	**1-107-103-00**	**MICA 6PF 50V**
C10	**1-107-106-00**	**MICA 9PF 50V**
C14	**1-123-296-00**	**ELECT 220 20% 6.3V**
C15	**1-107-061-00**	**MICA 10PF 5% 50V**
C19	**1-108-563-00**	**MYLAR 0.0022 10% 50V**
C20	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C21	**1-108-232-00**	**MYLAR 0.0033 10% 50V**
CN1	1-560-056-00	RECEPTACLE, MALE, 6P
	1-561-175-00	PLUG, HOUSING, FEMALE, 6P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN2	1-508-931-00	RECEPTACLE, MALE, 16P
	1-561-035-00	PLUG, HOUSING, FEMALE, 16P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
CN5	1-560-052-00	RECEPTACLE, MALE, 8P
	1-561-176-00	PLUG, HOUSING, FEMALE, 8P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
D1~D13	**8-719-815-55**	**1S1555**
D14	**8-719-156-25**	**RD5.6E-B2Z**
D15	**8-719-156-25**	**RD5.6E-B2Z**
D16	**8-719-156-25**	**RD5.6E-B2Z**
D17	**8-719-156-25**	**RD5.6E-B2Z**
D18	**8-719-815-55**	**1S1555**
D19	**8-719-815-55**	**1S1555**
D20	**8-719-815-55**	**1S1555**
IC1	**8-743-150-00**	**BX-315A**
IC2	**8-743-150-00**	**BX-315A**
IC3	**8-743-150-00**	**BX-315A**
IC4	**8-759-940-98**	**CD4098BE, C-MOS; RCA**
IC5	**8-759-240-17**	**TC4017BP, C-MOS (CD4017AE; RCA)**
IC6	**8-759-240-99**	**TC4099BP, C-MOS (CD4099BE; RCA)**
IC7	**8-759-240-16**	**TC4016BP, C-MOS (CD4016BE; RCA)**
IC8	**8-759-240-66**	**TC4066BP, C-MOS (CD4066BE; RCA)**
IC9	**8-759-908-05**	**µA78L05ACL; TI**

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Ref. No.	Parts No.	Description
Q1	**8-729-364-12**	**2SC641K**
Q2	**8-729-364-12**	**2SC641K**
Q3	**8-729-612-77**	**2SA1027R**
Q4	**8-729-364-12**	**2SC641K**
Q5	**8-729-364-12**	**2SC641K**
Q6	**8-729-364-12**	**2SC641K**
Q7	**8-765-450-20**	**2SK125**
Q8	**8-765-450-20**	**2SK125**
Q9	**8-765-212-20**	**2SA925**
Q10	**8-765-212-20**	**2SA925**
Q11	**8-765-212-20**	**2SA925**
Q13	**8-765-212-20**	**2SA925**
Q14	**8-724-375-01**	**2SC403C**
Q15	**8-765-450-20**	**2SK125**
Q16	**8-729-364-12**	**2SC641K**
Q17	**8-724-375-01**	**2SC403C**
R1	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R2	**1-214-557-00**	**METAL 1K 1% 1/8W**
R3	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R4	**1-214-568-00**	**METAL 3K 1% 1/8W**
R6	**1-214-530-00**	**METAL 75 1% 1/8W**
R7	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R8	**1-214-557-00**	**METAL 1K 1% 1/8W**
R9	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R10	**1-214-568-00**	**METAL 3K 1% 1/8W**
R12	**1-214-530-00**	**METAL 75 1% 1/8W**
R13	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R14	**1-214-557-00**	**METAL 1K 1% 1/8W**
R15	**1-214-574-00**	**METAL 5.1K 1% 1/8W**
R16	**1-214-568-00**	**METAL 3K 1% 1/8W**
R18	**1-214-530-00**	**METAL 75 1% 1/8W**
R21	**1-214-582-00**	**METAL 11K 1% 1/8W**
RV1	**1-226-096-00**	**VAR, METAL 500K**

RC 13 BOARD

Ref. No.	Parts No.	Description
	1-602-108-00	PRINTED CIRCUIT BOARD "RC-13"
C1	**1-123-336-00**	**ELECT 470 25V**

Ref. No.	Parts No.	Description
CN1	1-560-189-00	RECEPTACLE, MALE, 20P
	1-561-485-00	PLUG, HOUSING, FEMALE, 20P
	1-508-944-00	PIN, INDEX
	1-561-037-00	CONTACT, FEMALE
D1	**8-719-156-25**	**RD5.6E-B2Z**
R6	**1-202-511-00**	**SOLID 2.7 5% 1/2W**

FRAME — CCU ADAPTOR —

Ref. No.	Parts No.	Description
	⚠ 1-533-154-00	**HOLDER, FUSE; FOR F101**
	1-932-441-00	**ADAPTOR HARNESS WITH RECEPTACLE 41P** **JAPAN UP TO #15200** **USA/CND UP TO #10200** **AEP UP TO #10400**
	1-932-441-13	**ADAPTOR HARNESS WITH RECEPTACLE 41P** **JAPAN #15201 & HIGHER** **USA/CND #10201 & HIGHER** **AEP #10401 & HIGHER**
C1	**1-161-025-00**	**CERAMIC 0.1 10% 25V**
C2	**1-161-025-00**	**CERAMIC 0.1 10% 25V**
CN102	**1-508-942-00**	**RECEPTACLE, MALE, 14P; VTR CONNECTOR**
CN103	**1-561-172-00**	**PLUG, HOUSING, FEMALE, 50P**
	1-561-039-00	**CONTACT, FEMALE, FOR AWG 20 ~ 24**
	1-561-054-00	**CONTACT, FEMALE, FOR AWG 26 ~ 30**
CN104	**1-561-376-00**	**RECEPTACLE, FEMALE, 4P; VF POWER OUT**
CN105	**1-509-184-00**	**RECEPTACLE, FEMALE, XLR-3P; MIC IN (AEP, U/C, BRZ)**
	1-561-578-00	**RECEPTACLE, MALE, XLR-3P; MIC IN (J)**
CN106	**1-560-078-00**	**RECEPTACLE, MALE, 6P; MONITOR IN**
CN107	***1**	**RECEPTACLE, MALE, XLR-4P; DC IN**

***1 Mark:** When you order this RECEPTACLE, See page 5-9 as detail.

Ref. No.	Parts No.	Description
⚠ D101	**8-719-100-51**	**5P2MS, THYRISTOR**
D102	**8-719-815-55**	**1S1555**

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Ref. No.	Parts No.	Description
⚠ F101	**1-532-537-00**	**4A; POWER**
J101	**1-507-676-00**	**JACK, PHONE; INCOM**
J102	**1-507-676-00**	**JACK, PHONE; PGM**
J103	**1-507-251-XX**	**JACK, EARPHONE**
R101	**1-246-453-00**	**CARBON, 150, 5%, 1/4W**
R102	**1-246-453-00**	**CARBON, 150, 5%, 1/4W**
R103	**1-246-485-00**	**CARBON, 3.3K, 5%, 1/4W**
R104	**1-246-497-00**	**CARBON, 10K, 5%, 1/4W**
R105	**1-246-497-00**	**CARBON, 10K, 5%, 1/4W**
RV101	**1-226-809-00**	**VAR, SOLID, 5K; INCOM**
RV102	**1-226-809-00**	**VAR, SOLID, 5K; PGM**
S101	**1-552-200-00**	**PUSH; CALL**
S102	**1-552-504-00**	**TOGGLE; POWER**
S103	***2**	**MICRO; POWER SELECT IN "DC IN"**

***2 Mark:**

1. When you order this micro switch (S103), See page 5-9 as detail.
2. When you need replacing from the former micro switch (1-516-658-00) to the new micro switch (1-553-442-00), Replace with the new connector (CN107) and their new bracket too.

5-4. PACKING MATERIAL & ACCESSORY (SUPPLIED)

Ref. No.	Parts No.	Description
	A-7511-451-A	**EXTENSION BOARD, EX-8**
	1-508-366-00	**RECEPTACLE, FEMALE, XLR-7P (FOR TALLY/INCOM)**
	1-508-558-00	**RECEPTACLE, MALE, 16P (FOR WAVEFORM OUT)**
	⚠ 1-532-203-00	**FUSE, T2A; IF-9A BOARD, F3&F4 (AEP)**
	⚠ 1-532-268-XX	**FUSE, 2A; IF-9 BOARD, F3&F4 (U/C, J, BRZ)**
	⚠ 1-532-349-XX	**FUSE, 4A; IF-9 BOARD, F1&F2 (U/C, J, BRZ)**
	⚠ 1-532-350-00	**FUSE, T4A; IF-9A BOARD, F1&F2 (AEP)**
	⚠ 1-532-537-00	**FUSE, 4A; CCU ADAPTOR, F101**
	⚠ 1-534-698-XX	**CORD, POWER (AEP)**
	⚠ 1-534-827-00	**CORD, POWER (U/C, BRZ)**
	⚠ 1-551-114-XX	**CORD, POWER (J)**
	1-560-103-00	**RECEPTACLE, MALE, 24P (FOR REMOTE)**
	2-258-202-00	**BAG, PROTECTION; FOR CCU ADAPTOR**
	2-270-678-00	CARTON, INDIVIDUAL
	2-270-679-00	CASE, ACCESSORY
	2-270-680-00	CUSHION, UPPER
	2-270-681-00	CUSHION, REAR
	2-270-682-00	CUSHION, FRONT
	2-270-683-00	CUSHION, LOWER
	2-270-686-00	BRACKET A; VCT-300
	2-270-687-00	BRACKET B; TRIPOD ADAPTOR, BVP-300/P/S
	2-270-699-02	**MOUNTING SCREW**
	3-532-304-00	**KNOB; CENTERING**
	3-651-981-00	**BAG, PROTECTION; FOR EX-8**
	3-701-616-00	**BAG, POLY; FOR BRACKET**
	3-701-619-00	**BAG, POLY; FOR SCREW**
	3-701-638-00	**BAG, POLY; FOR CCU-300/P/PM**

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BACKUP FILE

SONY®

CAMERA CONTROL UNIT

CCU-300

SUPPLEMENT-3 追加版-4

(FOR U/C) (J向)

CCU-300P

SUPPLEMENT-4

CCU-300PM

SUPPLEMENT-1

SUBJECT; Additional information of the circuit diagram and the mounted parts for the "Switching Regulator Block".

内容：スイッチングレギュレーターブロックの回路図，部品表です。マニュアルに追加してお使い下さい。

OPERATION AND MAINTENANCE MANUAL

9-966-564-83

Sony Corporation

1982.11 0907.6-1

© Printed in Japan

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BACKUP FILE

SONY®

CAMERA CONTROL UNIT

CCU-300P

SUPPLEMENT-2

(Manual Change Information)
Serial No. 11501 and Higher

OPERATION AND MAINTENANCE MANUAL

9-966-565-82

Sony Corporation

1981.8 0902.5-1

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TABLE OF CONTENTS
INHALTSVERZEICHNIS

1. OPERATION

Compatible Cameras 1-1
Features 1-1
Installation Precautions 1-1
Specifications 1-2
Mounting A CCU Adapter 1-3
  How to attach the CCU adapter using Bracket A 1-4
  How to attach the CCU adapter using Bracket B 1-5
Power Supply Connections 1-6
Camera Connections 1-7
Example of System Connections 1-9
Diagrams 1-10
Location of Parts and Controls 1-12
  Front Panel 1-12
  Controls 1-14
  Rear Panel 1-16
  Internal Controls 1-18
  CCU Adapter 1-20
Operating Cautions 1-21
Packing 1-22

1. BEDIENUNG

Kompatible Kamera 1-23
Merkmale 1-23
Zur Beachtung bei der Installation 1-23
Technische Daten 1-24
Montage des CCU-Adapters an der Kamera 1-25
  Montage des CCU-Adapters bei Verwendung der Montageplatte A 1-26
  Montage des CCU-Adapters bei Verwendung der Montageplatte B 1-27
Stromversorgungsanschlüsse 1-28
Kameraanschlüsse 1-29
Beispiele für Systemanschlüsse 1-31
Diagramme 1-32
Lage der Teile und Bedienungselemente 1-34
  Frontplatte 1-34
  Rückwärtige Anschlußplatte 1-38
  Einstellelemente im Geräteinneren 1-40
  CCU-Adapter 1-42
Vorsicht beim Betrieb 1-43
Verpackung 1-44

COVER REMOVAL

Front Panel Opening 2-1
Cover Removal 2-2

3. ALIGNMENT

3-1. Test Equipment 3-1
  3-1-1. Equipment Required 3-1
  3-1-2. Video Signal Required 3-1
3-2. Presetting of Each Switch and Control 3-2
  3-2-1. Front Panel 3-2
  3-2-2. Rear Panel 3-2
  3-2-3. Printed Circuit Board 3-2
3-3. Connection 3-2
3-4. Power Supply System Adjustment 3-3
  3-4-1. Reg 9.5V Adjustment 3-3
  3-4-2. Reg 9V Adjustment 3-3
  3-4-3. Reg −9V Adjustment 3-3
  3-4-4. Battery Alarm Adjustment 3-3
3-5. Genlock Control System Adjustment 3-4
  3-5-1. H Phase Control Calibration 3-4
  3-5-2. Burst Gate Pulse Width Adjustment 3-4
  3-5-3. Frame Gate Pulse Width Adjustment 3-4
3-6. Camera Control System Adjustment 3-5
  3-6-1. Data Latch Timing Adjustment 3-5
  3-6-2. Latch Timing Pulse Width Adjustment 3-5
3-7. Video (VBS/VB) Cable Compensator System Adjustment 3-5
  3-7-1. Cable Compensator Gain (0m) Adjustment and DC Balance Set 3-5
  3-7-2. Cable Compensation (150m) Adjustment 3-6
  3-7-3. Cable Compensation (300m) Adjustment 3-6
  3-7-4. DG Adjustment 3-7
  3-7-5. VB Output Signal Adjustment 3-7
3-8. Return Video Amp System Adjustment 3-8
  3-8-1. Return Video Level (VA-6 Board Input) Adjustment 3-8
  3-8-2. Return Video Output Level Adjustment 3-8
  3-8-3. Return Video DC Offset Adjustment 3-9
3-9. R•B•G Video Amp System Adjustment 3-9
  3-9-1. R•B•G Gain Adjustment 3-9
  3-9-2. R•B•G Cable Compensator (150m) Adjustment 3-10
  3-9-3. R•B•G Cable Compensator (300m) Adjustment 3-10
  3-9-4. R•B•G DC Offset Adjustment 3-11
3-10. Control Presetting 3-11
  3-10-1. R•B Gain, Pedestal Presetting 3-11
  3-10-2. Low Iris Control Presetting 3-12
3-11. Audio System Adjustment 3-12
  3-11-1. Audio Amp Bias Setting 3-12
  3-11-2. Audio Attenuator Adjustment 3-13

4. DIAGRAMS

Overall Block Diagram 4-1
R, G, B Cable Compensator Block Diagram 4-5
  VA-5 Board
Video (VBS) Cable Compensator Block Diagram 4-7
  VA-6 Board
Power Supply and Camera Control System (1) Block Diagram 4-9
  PW-47 Board
Camera Control Signal Decoder Block Diagram 4-11
  CO-5 Board
Camera Control System (2) Block Diagram 4-12
  IF-29 Board
Genlock Control Block Diagram 4-13
  SG-31A Board
Audio System Block Diagram 4-15
  AU-14 Board
  AU-15 Board
PW-47 Board 4-17
SG-31A Board 4-21
VA-5 Board 4-25
VA-6 Board 4-29
AU-14 Board 4-33
IF-29 Board 4-37
CCU Frame Wiring 4-41
  CN-19 Board
  FU-9/9A Board
  LP-10 Board
  SW-42 Board
AU-15 Board 4-46
CO-5 Board 4-51
CCU Adaptor Frame Wiring 4-55
  RC-13 Board

5. SPARE PARTS

5-1. Parts Information 5-1
5-2. Exploded View 5-3
  Front Panel Block 5-3
  Chassis Block 5-5
  Rear Panel Block 5-7
  CCU Adaptor Block 5-9
5-3. Electrical Parts List 5-11
5-4. Packing Material and Accessory (Supplied) 5-31

Ref. No.	Parts No.	Description
RV1	**1-224-940-00**	**VAR, METAL 10K**
RV2	**1-224-942-00**	**VAR, METAL 50K (AEP)**
RV3	**1-225-154-00**	**VAR, WIRE WOUND 10K**
RV4	**1-224-940-00**	**VAR, METAL 10K**
RV5	**1-224-940-00**	**VAR, METAL 10K**
RV6	**1-225-153-00**	**VAR, WIRE WOUND 2K**
S1	**1-553-439-00**	**TOGGLE**
S2	**1-553-250-00**	**ROTARY**
X1	**1-527-478-00**	**VX0, 14.31818MHz (U/C, J)**
	1-527-585-00	**VX0, 17.7345MHz (AEP)**
	1-527-798-00	**VXO, 14.3024MHz (BRZ)**

SW-42 BOARD

Ref. No.	Parts No.	Description
	1-602-106-00	PRINTED CIRCUIT BOARD, "SW-42"
R1	**1-246-465-00**	**CARBON 470 5% 1/4W**
R2	**1-246-487-00**	**CARBON 3.9K 5% 1/4W**
R3	**1-246-466-00**	**CARBON 510 5% 1/4W**
R4	**1-246-466-00**	**CARBON 510 5% 1/4W**
S1	**1-553-251-00**	**PUSH (MONITOR OUT SELECT)**

VA-5 BOARD

Ref. No.	Parts No.	Description
	A-7511-442-A	MOUNTED CIRCUIT BOARD, "VA-5"
C1	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C2	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C3	**1-123-298-00**	**ELECT 470 20% 6.3V**
C7	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C10	**1-161-464-00**	**CERAMIC 270PF 5% 50V**
C11	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C12	**1-107-102-00**	**MICA 5PF 50V**
C13	**1-107-068-00**	**MICA 20PF 5% 50V**
C14	**1-107-081-00**	**MICA 68PF 5% 50V**
C15	**1-107-075-00**	**MICA 39PF 5% 50V**
C16	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C17	**1-107-070-00**	**MICA 24PF 5% 50V**
C21	**1-107-072-00**	**MICA 30PF 5% 50V**
C22	**1-107-079-00**	**MICA 56PF 5% 50V**
C29	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C30	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C31	**1-123-298-00**	**ELECT 470 20% 6.3V**
C35	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C38	**1-161-464-00**	**CERAMIC 270PF 5% 50V**
C39	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C40	**1-107-102-00**	**MICA 5PF 50V**
C41	**1-107-068-00**	**MICA 20PF 5% 50V**
C42	**1-107-081-00**	**MICA 68PF 5% 50V**
C43	**1-107-075-00**	**MICA 39PF 5% 50V**
C44	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C45	**1-107-070-00**	**MICA 24PF 5% 50V**
C49	**1-107-072-00**	**MICA 30PF 5% 50V**
C50	**1-107-079-00**	**MICA 56PF 5% 50V**
C57	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C58	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C59	**1-123-298-00**	**ELECT 470 20% 6.3V**
C63	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C66	**1-161-464-00**	**CERAMIC 270PF 5% 50V**
C67	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C68	**1-107-102-00**	**MICA 5PF 50V**
C69	**1-107-068-00**	**MICA 20PF 5% 50V**
C70	**1-107-081-00**	**MICA 68PF 5% 50V**
C71	**1-107-075-00**	**MICA 39PF 5% 50V**
C72	**1-161-460-00**	**CERAMIC 120PF 5% 50V**
C73	**1-107-070-00**	**MICA 24PF 5% 50V**

NOTE:

1. **The shaded and ⚠-marked components are critical to safety. Replace only with same components as specified.**

2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

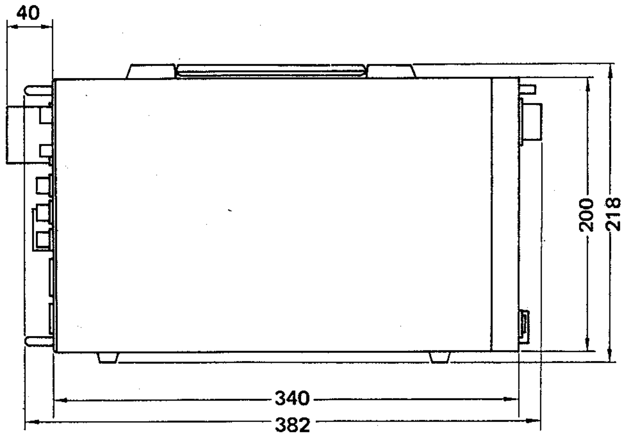
SPECIFICATIONS

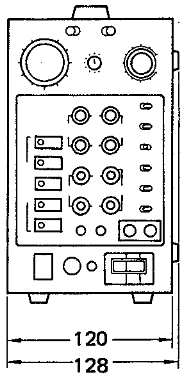
Power requirements	AC 100 V ±10%, 120 V ±10%/220 V ±10% 240 V ±10% (selectable) 50/60 Hz DC 10.5–17V
Power consumption	AC 85 W DC 49 W
Output signals	VIDEO OUT 1.0 Vp-p, VBS, 75 ohms (BNC type x1) 1.0 Vp-p, VBS/VB selectable, 75 ohms (BNC type x 1) R, G, B OUT (BNC type x3) 0.7 Vp-p, V, 75 ohms MONITOR OUT (BNC type x1) R, G, B, –G composite signals or encoder output signal 1.0 Vp-p, VS/VBS, 75 ohms WAVEFORM OUT (16-pin connector) ENCODER OUT: 1.0Vp-p, VBS, high impedance R OUT: 0.7Vp-p, V, 75 ohms G OUT: 0.7Vp-p, V, 75 ohms B OUT: 0.7Vp-p, V, 75 ohms SYNC OUT: 3.5 Vp-p, high impedance BLANKING OUT: 5.0 Vp-p, high impedance DC OUT: 10.5–17V GND MIC OUT (XLR-3-31) 0 dB/–20 dB (selectable) impedance 600 ohms
Control items	Iris (auto/manual) white balance (auto/manual) black balance (auto/manual) gain (R/B) pedestal (master/R/B) centering (R/B-horizontal, R/B-vertical) gain select (0 dB/+9 dB/+18 dB) mode select (camera/bars/test) incom select (common/private) detail (ON/OFF) phase (H/SC) cable compensation tally call

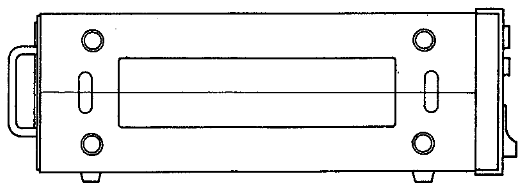
Cable compensation	0 (25m)/50/100/150/200/250/300 m (selectable in 7 stages): 5.5 MHz ±0.5 dB 400/500/600 m (selectable in 3 stages): 4.0 MHz ±1 dB	
Gen-lock	Horizontal phase adjustable range: +3 μ sec to –1.5 μsec or more (with respect to input phase) SC phase adjustment range: 360° Coupling accuracy: H: Within ±0.01 μsec SC: Within ±1°	
Iris adjustment	Close ↔ open, auto/manual selectable	
Master pedestal adjustment	More than ±30% of rating	
R/B gain adjustment	More than ±20% of rating	
R/B pedestal adjustment	More than ±20% of rating	
Centering adjustment	More than ±1% of rating	
Tally/call	Contact and power supply (DC 12V/24V)	(XLR-7-32)
Intercom	INPUT: –16 dB, 600 ohms balanced OUTPUT: 0 dB, 600 ohms balanced	
Program audio in	–16 dB, 600 ohms balanced (XLR-3-31)	
Remote control	Local/remote	
Ambient operating temperature	–10°C to +45°C (CCU and CCU adapter)	
Dimensions	CCU: 218(W) x 128(H) x 382(D) mm CCU adapter: 77(W) x 146.5(H) x 104(D) mm	
Weight	CCU: 6.5 kg CCU adapter: 0.7 kg	
Accessories	Power cord x 1 Centering knob x 4 Power fuse (4A) x 2 DC fuse (2A) x 2 DC microfuse (4A) x 2 Extension board x 1 Bracket A X 1 Bracket B X 1 CCU adapter mounting screw X 2 Screw (⊕ B 4 x 8) x 4 Screw (⊕ B 3 x 16) x 2 Screw (⊕ B 4 x 16) x 2 Connector (16-pin) Connector (24-pin) Connector (XLR-7-11C)	

Optional accessories

Camera cable (41-pin, 34-core)
CCW-25 (25 m), CCW-50 (50 m), CCW-100 (100 m)
Rack mount adapter (RMM-301)







SONY®

BACKUP FILE

CAMERA CONTROL UNIT

CCU-300P

SUPPLEMENT-3

(Manual Change Information)
Serial No. 11701 and Higher

OPERATION AND MAINTENANCE MANUAL

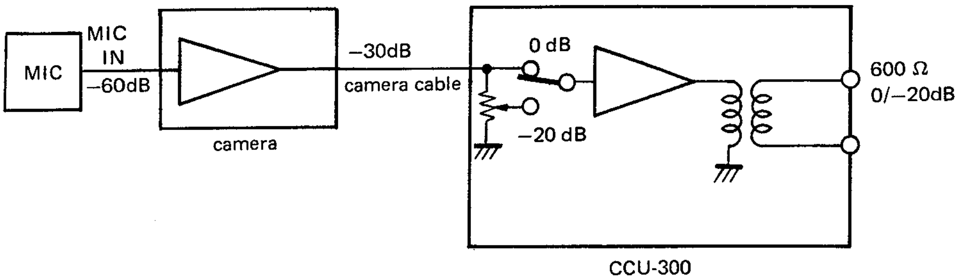
9-966-565-83

Sony Corporation

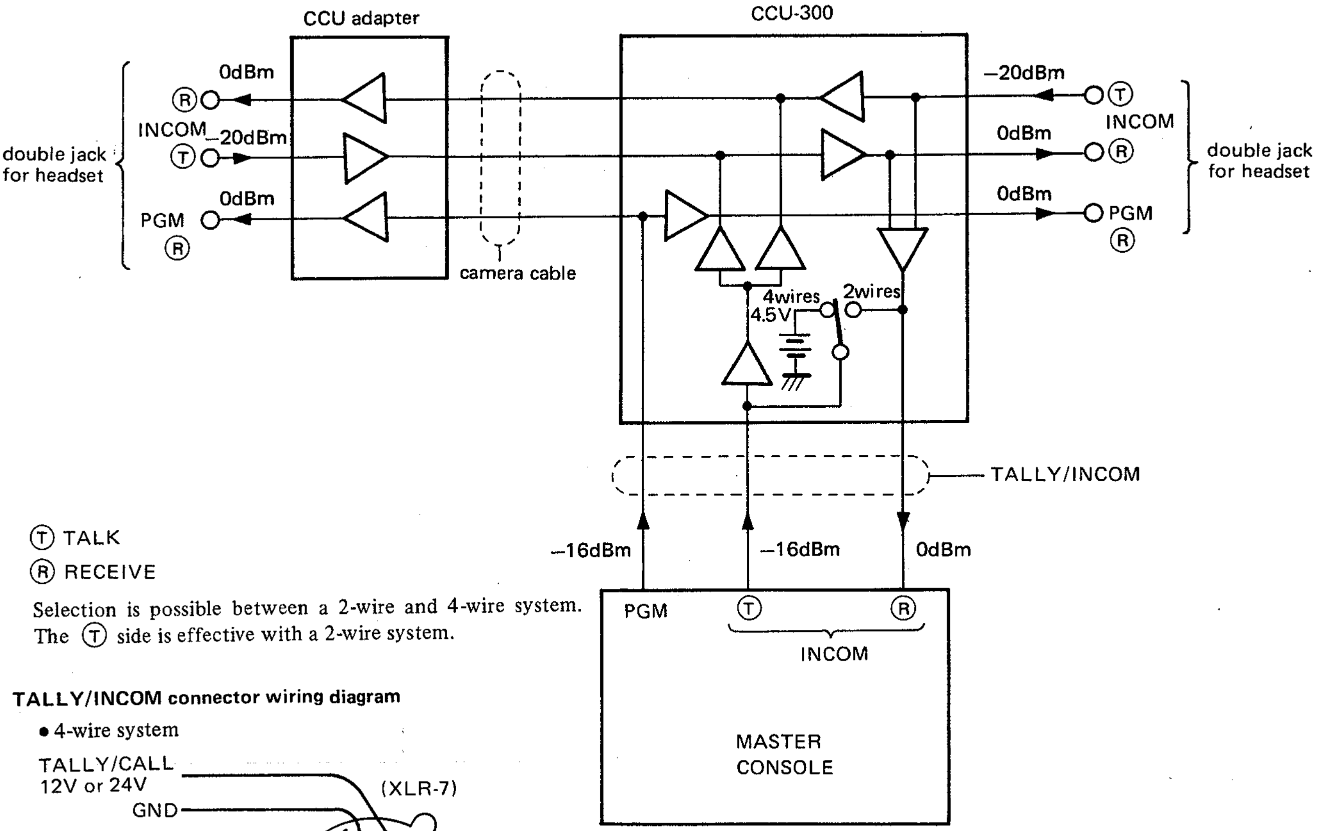
1981.10 0902.42-1
© Printed in Japan

DIAGRAMS

Audio system diagram


MIC
MIC
IN
−60dB
−30dB
camera cable
camera
0 dB
−20 dB
600 Ω
0/−20dB
CCU-300

PGM AUDIO/INCOM system diagram


CCU adapter
CCU-300
OdBm
R
INCOM
−20dBm
T
double jack
for headset
OdBm
PGM
R
camera cable
−20dBm
T
INCOM
OdBm
R
OdBm
PGM
R
double jack
for headset
4wires
2wires
4.5V
TALLY/INCOM
−16dBm
−16dBm
OdBm
PGM
T
R
INCOM
MASTER
CONSOLE

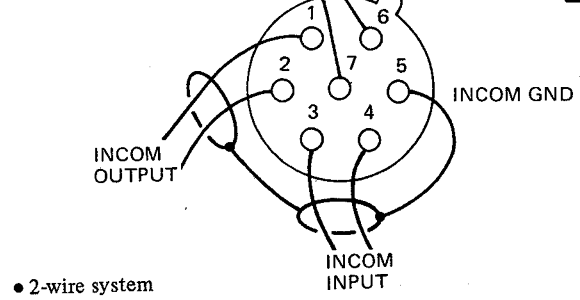
Ⓣ TALK

Ⓡ RECEIVE

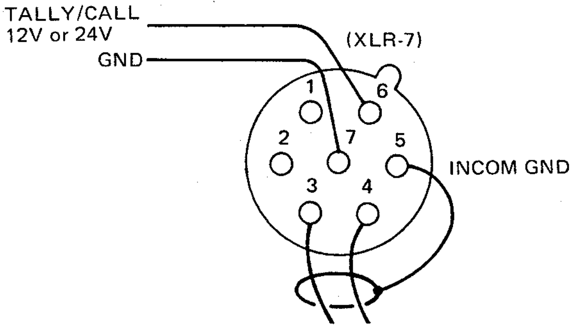
Selection is possible between a 2-wire and 4-wire system. The Ⓣ side is effective with a 2-wire system.

TALLY/INCOM connector wiring diagram

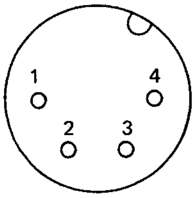
- 4-wire system


TALLY/CALL
12V or 24V
GND
(XLR-7)
1
6
2
7
5
3
4
INCOM GND
INCOM
OUTPUT
INCOM
INPUT

- 2-wire system


TALLY/CALL
12V or 24V
GND
(XLR-7)
1
6
2
7
5
3
4
INCOM GND

DC IN connector wiring diagram



1. GND.
2.
3.
4. +12 ~ 17V

Mr Stahl

PRODUCT FOCUS

SONY Broadcast
PRODUCT MANAGEMENT

SCS-Service-Leitung
Eing.: - 5. AUG. 1985
Erl. ØSL

BVP-330AP CCU ADAPTOR: NEW MODEL NAME

Product Type: BVP

Date: 31 July 1985
Number: BVP-011

The model name CCU-300P has been deleted. This used to refer to the combination of CCU base station and camera end adaptor for the BVP-330AP.

The two units must now be ordered separately under the names CCU-300PL and CA-330 respectively. The product code for the latter remains 501973020.

2620.-

VCT-300

498.-

941 357 000

E/GGP/RMH

SERVICE INFORMATION

SI-0132

Issued by: T. Evans

5th March, 1982

Model: CCU-300P - Applicable Serial Nos. up to 11901

Subject: Instability of Vertical Framing in the Genlock Mode

Under certain temperature conditions it has been noticed that the V. RESET pulse from the SG-31A board gives incorrect vertical framing.

If any such problem is encountered, replace C27, 4700pF CERAMIC (Sony Part No. 1-161-472-11) with a 4700pF Mylar (1-108-234-00).

Check that the Frame Gate Pulse is 350µs ± 5µsec. (Monitor TP4, adjust RV2 - please refer to the Operation and Maintenance Manual 3-5-3).

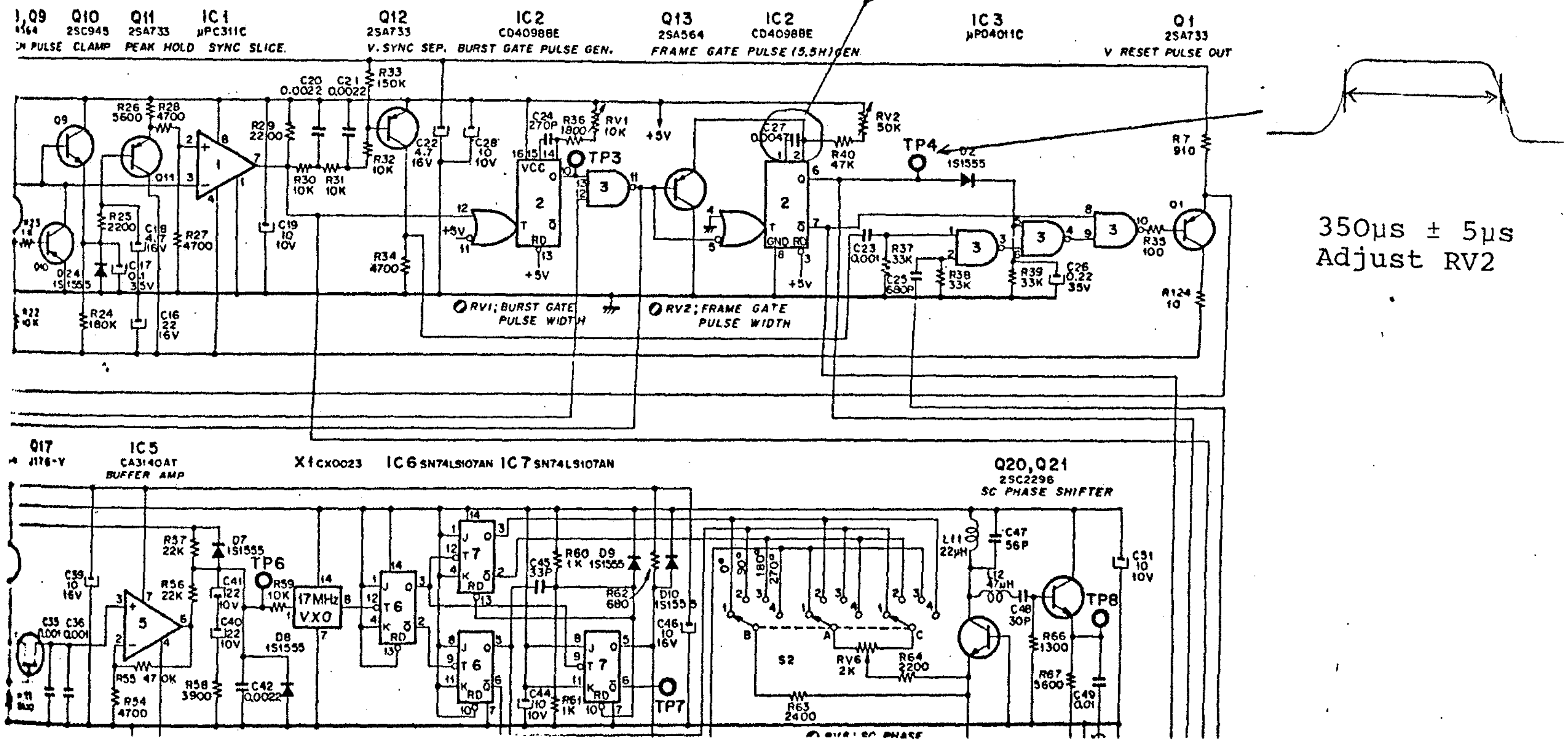
T. Evans/

TOM EVANS

TE/PAP.

change to: 1-108-234-00

SG-31A


Q9
Q10 2SC945 CLAMP
Q11 2SA733 PEAK HOLD
IC1 µPC311C SYNC SLICE.
Q12 2SA733 V. SYNC SEP.
IC2 CD4098BE BURST GATE PULSE GEN.
Q13 2SA564 FRAME GATE PULSE (5.5H) GEN
IC2 CD4098BE
IC3 µPD4011C
Q1 2SA733 V RESET PULSE OUT
TP3
TP4
D2 1S1555
RV2 50K
R40 47K
C27 0.0047
RV1; BURST GATE PULSE WIDTH
RV2; FRAME GATE PULSE WIDTH
R7 910
R35 100
R124 10
+5V
Q17
IC5 CA3140AT BUFFER AMP
X1 CX0023
IC6 SN74LS107AN
IC7 SN74LS107AN
17MHz VXO
TP6
TP7
TP8
S2
RV6 2K
Q20, Q21 2SC2296 SC PHASE SHIFTER
L11 22µH
C47 56P
0
90
180
270

350µs ± 5µs
Adjust RV2

SONY
TECHNICAL NEWS

No. VTRW81-1025

Model
CCU-300 Series

Date
1981. 3. 11

SONY CORP.
VIDEO DIVISION

Title
CCU-300 Series

CHANGE OF HOLDER FOR MOUNTED CIRCUIT BOARD.

☐ Service Technique ☐ Product Correction ☐ Product Improvement ☑ Other

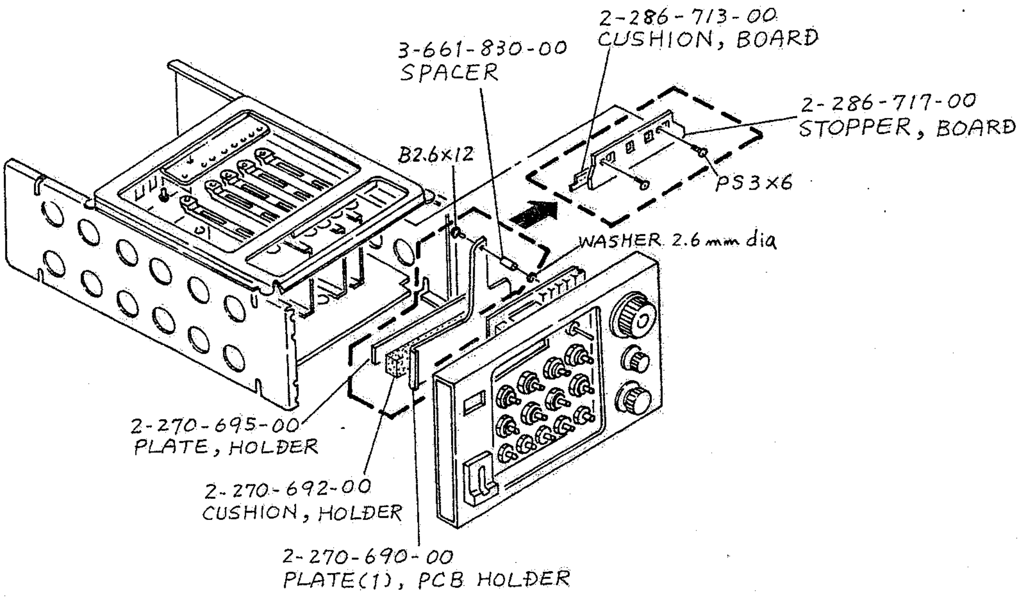
Description

1. Holder for the mounted circuit boards (PW-47, VA-5, VA-6, AU-14, SG-31) has been changed from following serial number by reason of production side.

2. Serial number of machines that are modified at the factory.
   CCU-300P . . . . . 11101 and higher
   CCU-300 (U/C) . . . 10901 and higher
   CCU-300PM . . . . . 10006 and higher

3. Use of new and former parts.

	Parts number	Serial number of machines CCU-300 (U/C) . . . 10001 ~ 10900 CCU-300P . . . . 10001 ~ 11100 CCU-300PM . . . . . 10001 ~ 10005	Serial number of machines CCU-300 (U/C) . . . 10901 and higher CCU-300P . . . . 11101 and higher CCU-300PM . . . . . 10006 and higher
former parts	2-270-695-00 2-270-692-00 2-270-690-00 3-661-830-00	possible	impossible
new parts	2-286-713-00 2-286-717-00	impossible	possible


2-286-713-00
CUSHION, BOARD
3-661-830-00
SPACER
2-286-717-00
STOPPER, BOARD
B2.6×12
PS3×6
WASHER 2.6 mm dia
2-270-695-00
PLATE, HOLDER
2-270-692-00
CUSHION, HOLDER
2-270-690-00
PLATE(1), PCB HOLDER

Notes For Parts Administration

☑1. Stock both old and new parts, while new parts cannot be used in old model.
☐2. Stock new parts, while new parts can be used in both old and new models.
☐3. Stock new parts after liquidation of old parts.
☐4. Not necessary to stock new parts.
☐5. Other

Planned by : T. Koshimura
Proposed by : H. Hoshi
Approved by :

VIDEO
56. 3. 12
THIRA

Sheet 1 of 1

SONY
TECHNICAL NEWS

No. VTRW81-1025

Model
CCU-300 Series

Date
1981. 3. 11

SONY CORP.
VIDEO DIVISION

Title
CCU-300 Series

CHANGE OF HOLDER FOR MOUNTED CIRCUIT BOARD.

☐ Service Technique ☐ Product Correction ☐ Product Improvement ☑ Other

Description

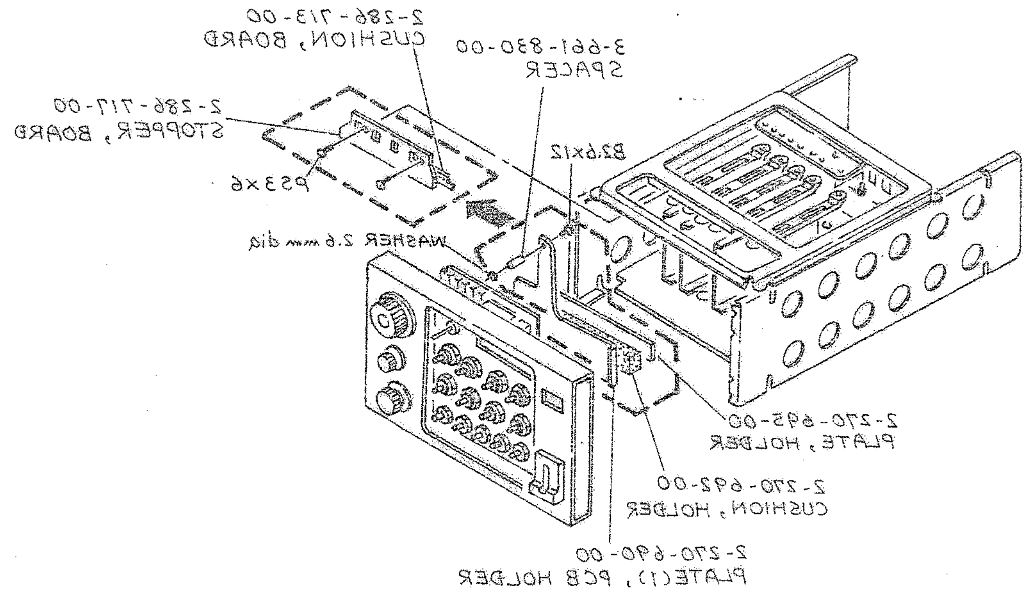
1. Holder for the mounted circuit boards (PW-47, VA-5, VA-6, AU-14, SG-31) has been changed from following serial number by reason of production side.

2. Serial number of machines that are modified at the factory.

CCU-300P ..... 11101 and higher
CCU-300 (U/C) ... 10901 and higher
CCU-300PM ..... 10006 and higher

3. Use of new and former parts.

	Parts number	Serial number of machines CCU-300 (U/C) ... 10001 ~ 10900 CCU-300P .... 10001 ~ 11100 CCU-300PM ..... 10001 ~ 10005	Serial number of machines CCU-300 (U/C) ... 10901 and higher CCU-300P .... 11101 and higher CCU-300PM ..... 10006 and higher
former parts	2-270-695-00 2-270-692-00 2-270-690-00 3-661-830-00	possible	impossible
new parts	2-286-713-00 2-286-717-00	impossible	possible


2-286-713-00
CUSHION, BOARD
3-661-830-00
SPACER
2-286-717-00
STOPPER, BOARD
B2.6x12
PS3x6
WASHER 2.6 mm dia
2-270-695-00
PLATE, HOLDER
2-270-692-00
CUSHION, HOLDER
2-270-690-00
PLATE(1), PCB HOLDER

Notes For Parts Administration

☑1. Stock both old and new parts, while new parts cannot be used in old model.

☐2. Stock new parts, while new parts can be used in both old and new models.

☐3. Stock new parts after liquidation of old parts.

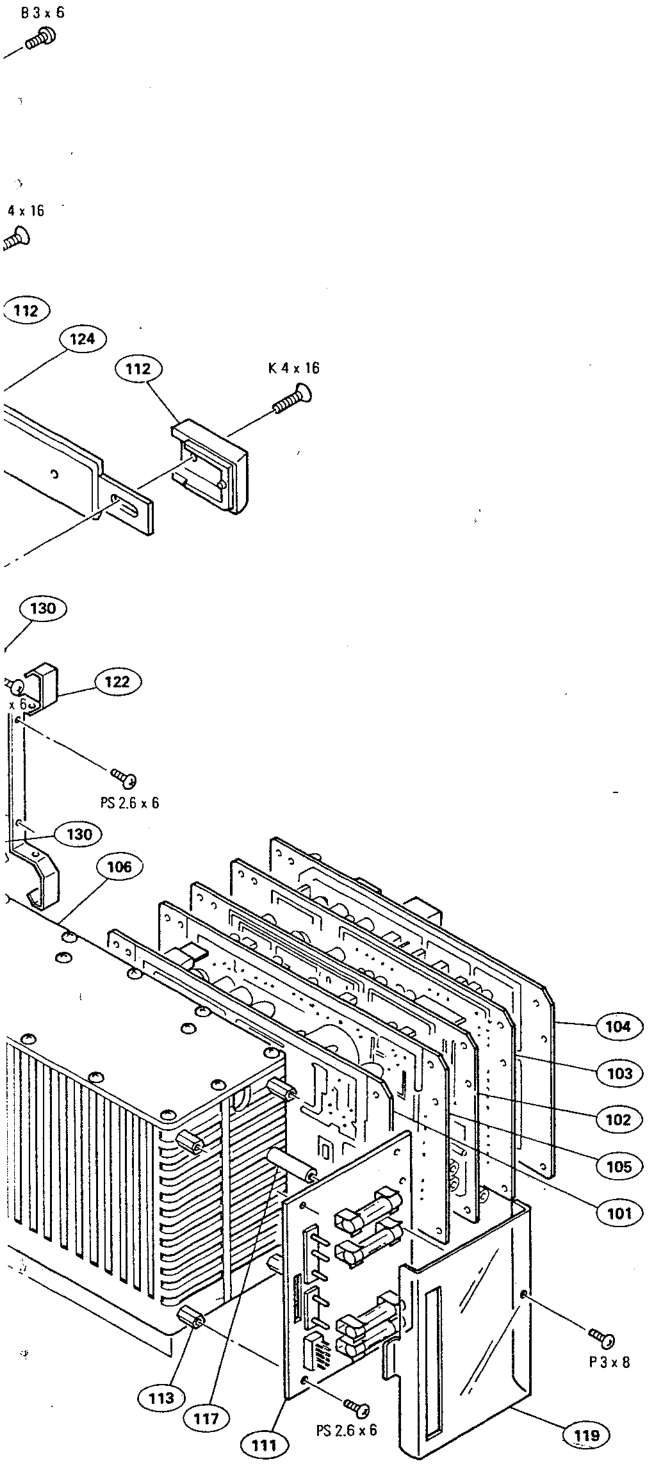
☐4. Not necessary to stock new parts.

☐5. Other

Planned by :
Proposed by :
Approved by :

Sheet 1 of 1

CCU-300P



No.	Part No.	Description	UK US $
101	A-7511-441-A	MOUNTED CIRCUIT BOARD, "PW-47"	494,49
102	A-7511-442-A	MOUNTED CIRCUIT BOARD, "VA-5"	437.01
103	A-7511-443-A	MOUNTED CIRCUIT BOARD, "VA-6"	471,51
104	A-7511-444-A	MOUNTED CIRCUIT BOARD, "AU-14"	241,50
105	A-7511-445-A	MOUNTED CIRCUIT BOARD, "SG-31"	
	A-7511-446-A	MOUNTED CIRCUIT BOARD, "SG-31 (A)" (For PAL model)	379,5
			2.024.0
⚠ **106**	**1-413-047-21**	**REGULATOR, SWITCHING**	
107	**1-426-037-00**	**TRANSFORMER, INPUT (T2)**	
108	**1-427-348-00**	**TRANSFORMER, OUTPUT (T1)**	
109	1-561-038-00	PLUG, HOUSING, FEMALE, 37P (CN5)	
110	1-602-104-00	PRINTED CIRCUIT BOARD, "CN-19"	
⚠ 111	1-602-107-00	PRINTED CIRCUIT BOARD, "FU-9"	
112	2-253-306-00	TABLE, HANDLE	
113	2-270-601-00	SUPPORT	
114	2-270-602-00	RETAINER, RAIL	
115	2-270-606-00	BRACKET (2), TRANSFORMER	
116	2-270-609-00	BRACKET (1), TRANSFORMER	
117	2-270-612-00	SUPPORT, COVER	
118	2-270-614-00	SPACER	
119	2-270-619-00	COVER, FUSE	
120	2-270-635-00	COVER, LOWER	
121	2-270-636-00	COVER, UPPER	
122	2-270-655-00	RETAINER, LOCK	
123	**3-143-272-00**	**FOOT, RUBBER**	
124	**3-419-372-21**	**HANDLE**	
125	3-637-210-00	GUIDE, PC BOARD	
127	3-637-219-00	GUIDE HOOK, PWB	
130	2-270-693-00	PLATE, LOCK	
131	2-270-697-00	SPACER	
132	2-270-698-00	CUSHION, FOOT	
133	**4-812-554-11**	**WASHER**	

NOTE:

1. The shaded and ⚠-marked components are critical to safety. Replace only with same component as specified.
2. Parts printed in Bold-Face type are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

[illegible] FEDOR BIKIC 1 / [illegible]

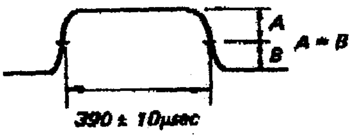
.7-1284 SBC Cologne SBC-FAX.15842

[illegible]

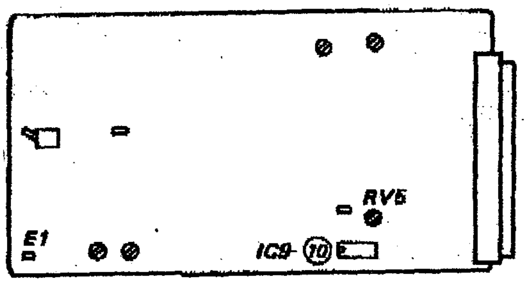
Connection; Same as Section 3-3, Connection (1)
Equipment; Oscilloscope

Extend the PW-47 board using Extension Board.

Spec. and Adj.
IC9- ⑩ pin/PW-47 (GND: E1/PW-47)
⊘ RV5/PW-47


A
B
A = B
390 ± 10μsec

PW-47 BOARD

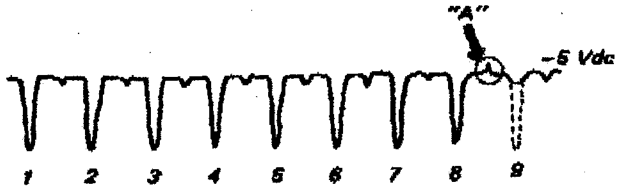


3-6-2. Latch Timing Pulse Width Adjustment

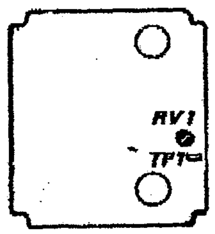
Connection; Same as Section 3-3, Connection (1)
Equipment; Oscilloscope

Spec. and Adj.
TP1/CO-5 (GND: chassis)

Adjust ⊘ RV1 so that a spike markd "A" is appeared between 8th and 9th pulse.


"A"
-5 Vdc
1
2
3
4
5
6
7
8
9

CO-5 BOARD

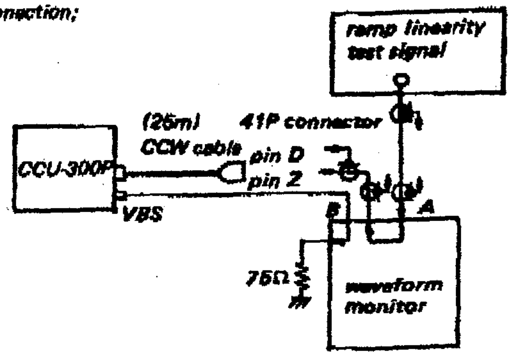


— COMPONENT SIDE —

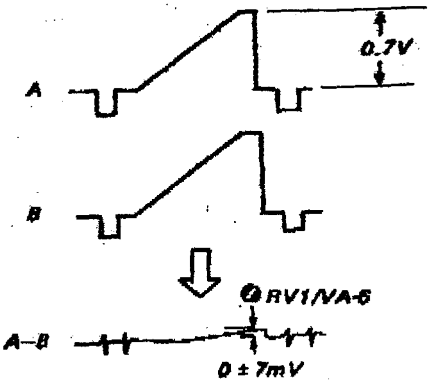
3-7. VIDEO (VBS/VS) CABLE COMPENSATION

3-7-1. Cable Compensator Gain (0m) Adjustment and DC Balance Set

Connection;

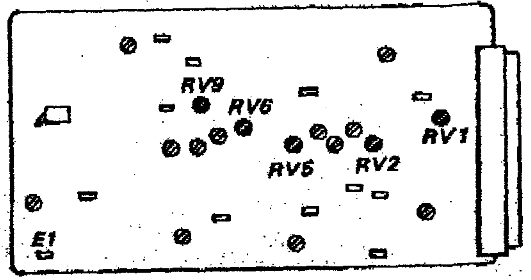

ramp linearity test signal
(25m) CCW cable
41P connector
CCU-300P
pin D
pin 2
VBS
B
A
75Ω
waveform monitor

Equipment; Waveform Monitor
Spec. and Adj.
Step 1. DC Balance Set
⊘ RV2/VA-6
⊘ RV6/VA-6
Set the ⊘ RV2 and ⊘ RV6 to the mechanical center position.
Step 2. Set the following controls;
⊘ RV5/VA-6; ⊖ position
⊘ RV9/VA-6; ⊕ position
CABLE COMP/front panel; 0m
Step 3. A; Ramp Linearity Test Signal } A−B mode
B; VBS out/Rear Panel


0.7V
A
B
⊘ RV1/VA-6
A−B
0 ± 7mV

Note: After completing this adjustment, proceed to Section 3-7-4.

VA-6 BOARD


RV9
RV6
RV1
RV5
RV2
E1

J-1604

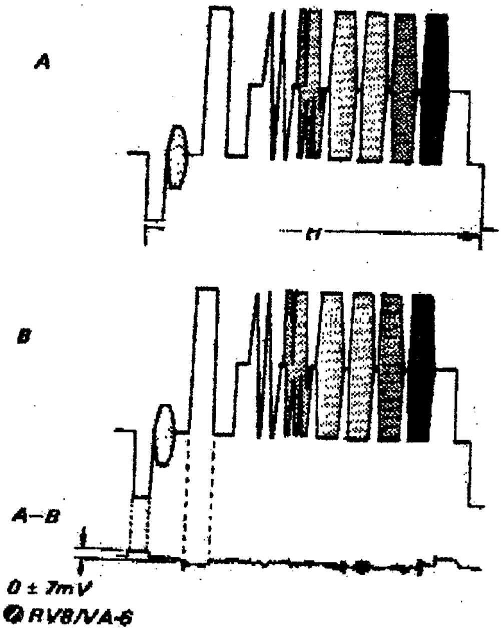
ATTN FEDOR BIKIC
SBC Cologne 212

SBC-FAX.1586

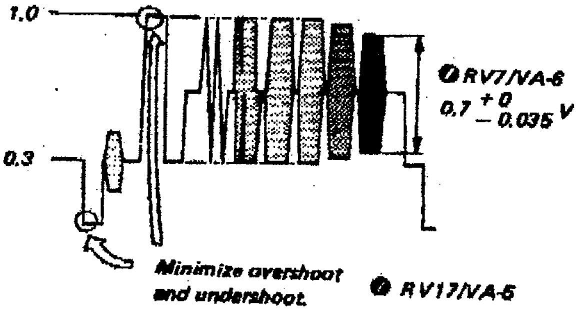
3-7-2. Cable Compensation (150m) Adjustment

Connection; Same as Section 3-7-1 except
CCW cable length and video signal
CCW Cable Length; 150m (50m + 100m)
Video Signal; PAL Multiburst Signal
Equipment; Waveform Monitor

Spec. and Adj.
Step 1. Amplitude Adjustment
A Multiburst Signal } A-B
B VBS out/rear panel } mode


A
t1
B
A–B
0 ± 7mV
RV8/VA-6

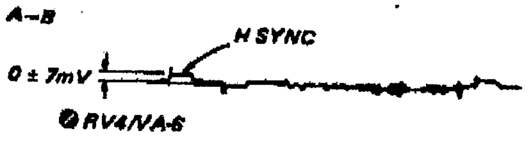
Step 2. Frequency Response Adjustment
Set the VOLTS FULL SCALE control of the waveform monitor to UNCALIBRATION, so that multiburst waveform as shown below is obtained on the waveform monitor screen.


1.0
0.3
RV7/VA-6
0.7 +0 −0.035 V
Minimize overshoot and undershoot.
RV17/VA-6

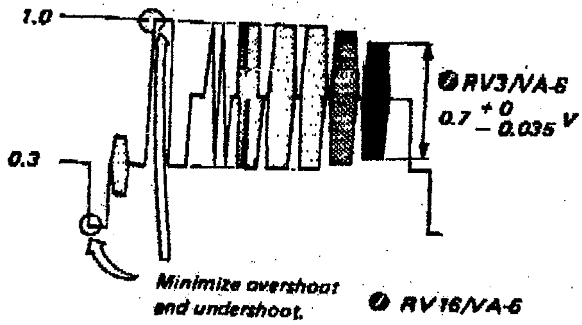
3-7-3. Cable Compensation (300m) Adjustment

Connection; Same as Section 3-7-2 except
CCW cable length
CCW Cable: 300m (100m + 100m + 100m)
Equipment; Waveform Monitor

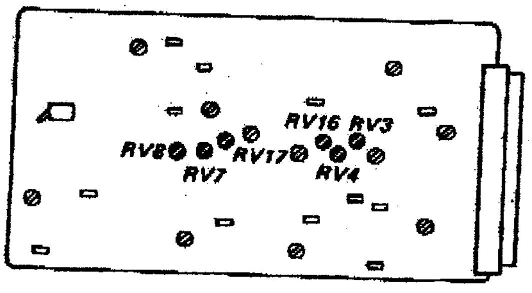
Spec. and Adj.
Step 1. Same as Section 3-7-2, Step 1 except


A–B
H SYNC
0 ± 7mV
RV4/VA-6

Step 2. Same as Section 3-7-2, Step 2 except


1.0
0.3
RV3/VA-6
0.7 +0 −0.035 V
Minimize overshoot and undershoot.
RV16/VA-6

VA-6 BOARD


RV16
RV3
RV8
RV17
RV7
RV4

SONY

TECHNICAL NEWS

No. VTRW81-1027

Model
CCU-300 series

Title

CCU-300 series

CHANGE OF "WINDOW (2), REMOTE CONTROL".

Date
1981. 3. 11

SONY CORP.
VIDEO DIVISION

☐ Service Technique ☐ Product Correction ☐ Product Improvement ☑ Other

Description

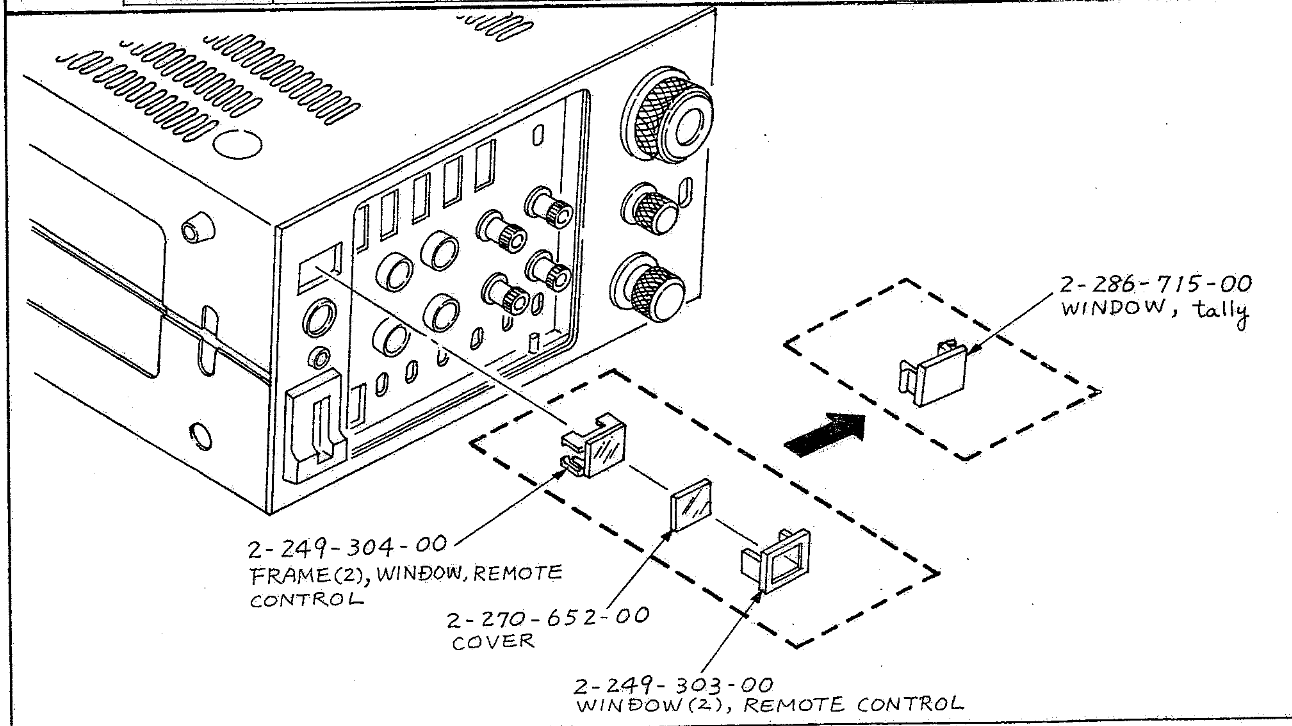
1. "WINDOW (2), REMOTE CONTROL" has been changed from following serial number in order to standardize the parts with CCU-6000.

2. Serial number of machines that are modified at the factory.

   CCU-300P ..... 11001 and higher
   CCU-300 (U/C) .... 10901 and higher
   CCU-300PM ...... 10006 and higher

3. Use of new and former parts.

	Parts number	Serial number of machines CCU-300 (U/C) ... 10001 ~ 10900 CCU-300P .... 10001 ~ 11000 CCU-300PM ..... 10001 ~ 10005	Serial number of machines CCU-300 (U/C) ... 10901 and higher CCU-300P .... 11001 and higher CCU-300PM ..... 10006 and higher
former parts	2-249-303-00	possible	impossible
	2-249-304-00		
	2-270-652-00		
new parts	2-286-715-00	possible	possible



Notes For Parts Administration

☐1. Stock both old and new parts, while new parts cannot be used in old model.

☑2. Stock new parts, while new parts can be used in both old and new models.

☐3. Stock new parts after liquidation of old parts.

☐4. Not necessary to stock new parts.

☐5. Other

Planned by : T. Koshimura Proposed by : H. Hoshi Approved by :

VIDEO
56. 3. 12
T.HIRA

Sheet 1 of 1

SONY®

TECHNICAL NEWS

No. VTRW81-1027

Model CCU-300 series

Date 1981. 3. 11

SONY CORP.
VIDEO DIVISION

Title

CCU-300 series
CHANGE OF "WINDOW (2), REMOTE CONTROL".

☐Service Technique ☐Product Correction ☐Product Improvement ☑Other

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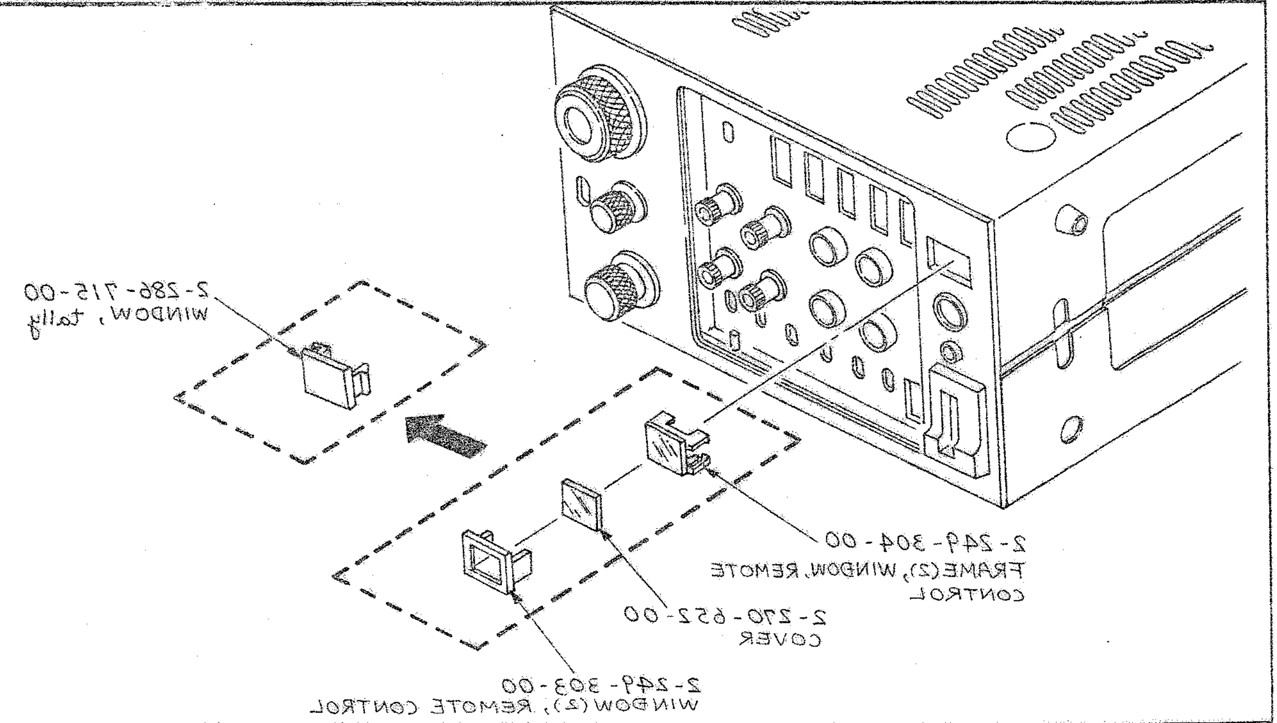
CCU-300PM ...... 10006 and higher

3. Use of new and former parts.

	Parts number	Serial number of machines CCU-300 (U/C) ... 10001 ~ 10900 CCU-300P .... 10001 ~ 11000 CCU-300PM ..... 10001 ~ 10005	Serial number of machines CCU-300 (U/C) ... 10901 and higher CCU-300P .... 11001 and higher CCU-300PM ..... 10006 and higher
former parts	2-249-303-00 2-249-304-00 2-270-652-00	possible	impossible
new parts	2-286-715-00	possible	possible



Notes For Parts Administration

☐1. Stock both old and new parts, while new parts cannot be used in old model.

☑2. Stock new parts, while new parts can be used in both old and new models.

☐3. Stock new parts after liquidation of old parts.

☐4. Not necessary to stock new parts.

☐5. Other

Planned by : T. Yoshimura Proposed by : Approved by :

VIDEO
56. 3. 12
T.HIRA

Sheet 1 of 1

SONY®
TECHNICAL NEWS

No.
VTRW81-1023

Model
CCU-300 (U/C)
CCU-300PM (BRZ)
CCU-300P (AEP)

Date
1981. 2. 26

SONY CORP.
VIDEO DIVISION

Title

CCU-300 series
INFORMATION TO "SWITCHING REGULATOR" REPLACEMENT

☐ Service Technique ☐ Product Correction ☑ Product Improvement ☐ Other

Description

- The "Switching Regulator" had been changed as shown on table below.
    1. It is not interchangeable between former and new "Switching Regulator".
    2. Therefore, "Printed Circuit Board FU-9", "Cover, Fuse" and other small components also had changed at the same time.
    3. We had made a new service part block named "POWER ASS'Y" contains "Switching Regulator", "Printed Circuit Board FU-9", "Cover, Fuse" and the other small components that substitute with former machine's.

- Replacement of "Switching Regulator".
    1. The machines using former type of "Switching Regulator". (1) ➡ Replace as a "POWER ASS'Y" block.
    2. The machines using new type of "Switching Regulator". (2) ➡ Replace only new "Switching Regulator" or as a "POWER ASS'Y" block.

- Table, interchangeability.

Table 1; CCU-300 (U/C)/-300PM (BRZ)

Parts	Model/Serial No.	Former	New
		CCU-300(U/C): Up to 10300	CCU-300(U/C): 10301 and higher
Printed Circuit Board FU-9 (former)	1-602-107-00	YES	NO
Printed Circuit Board FU-9 (new)	1-602-107-14	NO	YES
Cover, Fuse (former)	2-270-619-00	YES	NO
Cover, Fuse (new)	2-275-612-00	NO	YES
Switching Regulator (former)	1-413-047-21	YES (Not available)	NO
Switching Regulator (new)	1-413-047-12	NO	YES
Power Ass'y (Additional)	A-7581-016-A	YES	YES

Notes For Parts Administration

☐1. Stock both old and new parts, while new parts cannot be used in old model.
☐2. Stock new parts, while new parts can be used in both old and new models.
☐3. Stock new parts after liquidation of old parts.
☐4. Not necessary to stock new parts.
☐5. Other

Planned by : K. Katoh
Proposed by :
Approved by : VIDEO 56. 2. 26 THIRA

SONY®
TECHNICAL NEWS

No. VTRW81-1023

Model
CCU-300 (U/C)
CCU-300PM (BRZ)
CCU-300P (AEP)

Date 1981. 2. 26

SONY CORP.
VIDEO DIVISION

Title
CCU-300 series
INFORMATION TO "SWITCHING REGULATOR" REPLACEMENT

☐Service Technique ☐Product Correction ☑Product Improvement ☐Other

Description

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  1. It is not interchangeable betweeen former and new "Switching Regulator".
  2. Therefore, "Printed Circuit Board PU-9", "Cover, Fuse" and other small components also had changed at the same time.
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- Replacement of "Switching Regulator".
  1. The machines using former type of "Switching Regulator". (1) ⟹ Replace as a "POWER ASS'Y" block.
  2. The machines using new type of "Switching Regulator". (2) ⟹ Replace only new "Switching Regulator" or as a "POWER ASS'Y" block.

- Table, interchangeability.

Table 1; CCU-300 (U/C)/-300PM (BRZ)

Parts \ Model/Serial No.		Former	New
		CCU-300(U/C): Up to 10300	CCU-300(U/C): 10301 and higher
Printed Circuit Board PU-9 (former)	1-602-107-00	YES	NO
Printed Circuit Board PU-9 (new)	1-602-107-14	NO	YES
Cover, Fuse (former)	2-270-619-00	YES	NO
Cover, Fuse (new)	2-275-612-00	NO	YES
Switching Regulator (former)	1-413-047-21	YES (Not available)	NO
Switching Regulator (new)	1-413-047-12	NO	YES
Power Ass'y (Additional)	A-7581-016-A	YES	YES

Notes For Parts Administration

☐1. Stock both old and new parts, while new parts cannot be used in old model.
☐2. Stock new parts, while new parts can be used in both old and new models.
☐3. Stock new parts after liquidation of old parts.
☐4. Not necessary to stock new parts.
☐5. Other

Planned by : Proposed by : Approved by :

VIDEO
56. 2. 26

Sheet 1 of 2

Table 2: CCU-300P(AEP)

Parts \ Serial No.		Former	New
		Up to 10500	10501 and higher
Printed Circuit Board FU-9 (former)	1-602-102-00	YES	NO
Printed Circuit Board FU-9 (new)	1-602-107-14	NO	YES
Cover, Fuse (former)	2-270-619-00	YES	NO
Cover, Fuse (new)	2-275-612-00	NO	YES
Switching Regulator (former)	1-413-047-21	YES (Not available)	NO
Switching Regulator (new)	1-413-047-22	NO	YES
Power Ass'y (Additional)	A-7581-017-A	YES	YES

28. 03. 83

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ENGINEERING BULLETIN

E-BVP-002

IMPROVEMENT IN PERFORMANCE OF CCU-300P TALKBACK CIRCUITS

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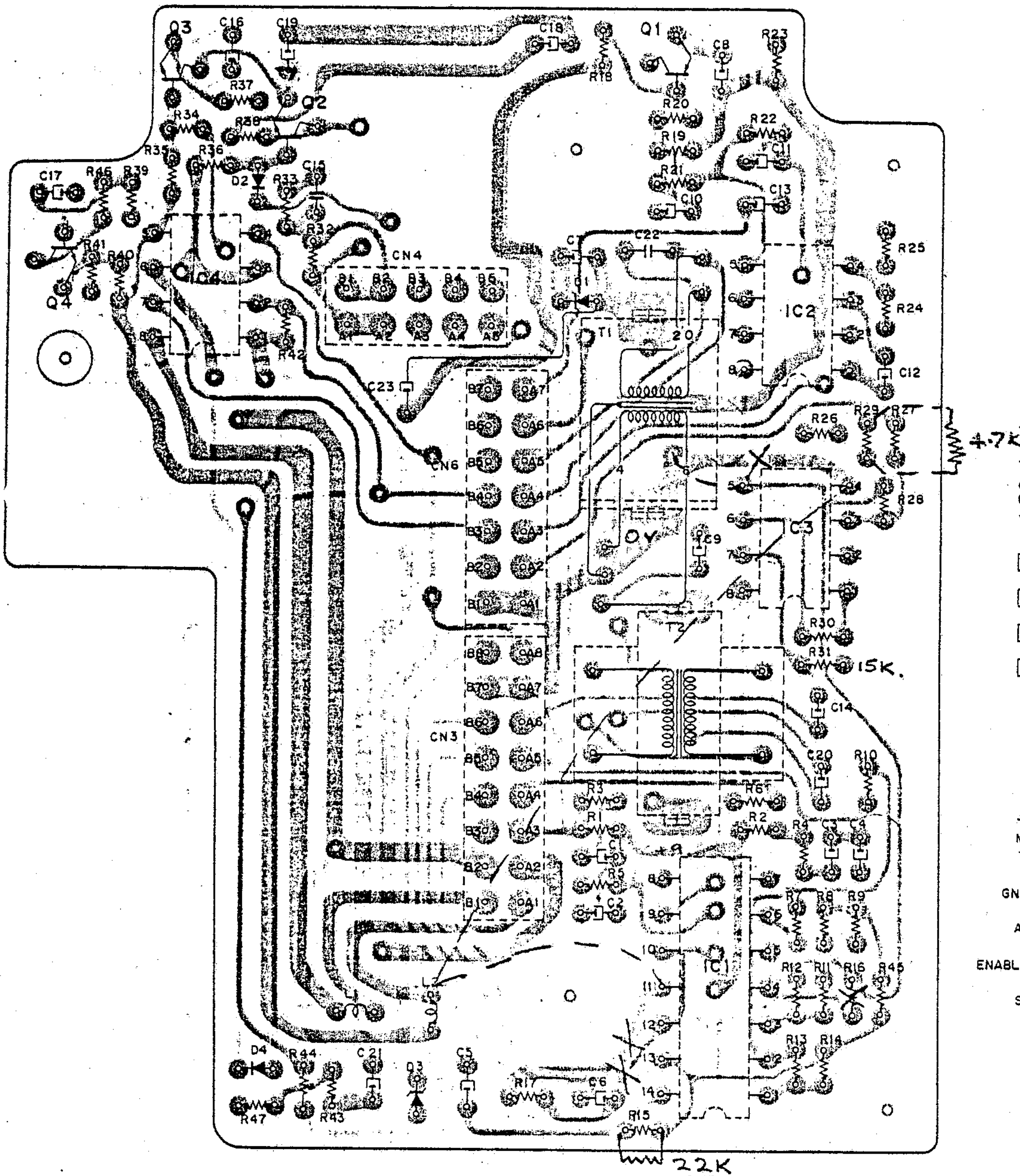
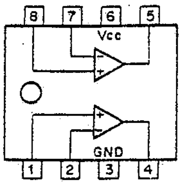
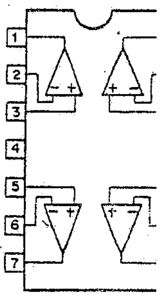

Q3
C16
C19
C18
Q1
C8
R23
R37
Q2
R18
R20
R34
R38
R22
R19
C11
R35
R36
C15
R21
C17
R46
R39
D2
R33
C10
C13
R32
C7
C22
CN4
R25
R41
R40
Q4
IC4
IC2
R24
R42
T1
C12
C23
CN6
R26
R29
R27
4.7K
R28
C3
C9
OY
T2
R30
R31
15K.
C14
CN3
C20
R10
R3
R6
R1
R2
R4
C1
R5
C2
R7
R8
R9
IC1
R12
R11
R16
R45
L1
D4
R44
C21
D3
C5
R17
C6
R13
R14
R47
R43
R15
22K

AU - 15 - COMPONENT SIDE -

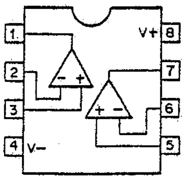
LM387N (NSC)
LOW NOISE AMPLIFIER
— TOP VIEW —


8
7
6
5
Vcc
GND
1
2
3
4

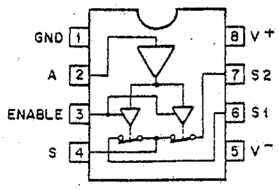
TL084CN
OPERATIONAL AMP
(J FET-INPUT)
— TOP VIEW —

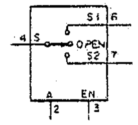


TL072CP (TI)
TL072ACP (TI)
TL072BCP (TI)
OPERATIONAL AMPLIFIER
(LOW-NOISE, JFET-INPUT)
— TOP VIEW —


1
2
3
4 V−
V+ 8
7
6
5

TL607CP (TI) SN72607P (TI)
MOS ANALOG SWITCH
— TOP VIEW —


GND 1
A 2
ENABLE 3
S 4
8 V+
7 S2
6 S1
5 V−


S1
6
4
S
OPEN
S2
7
A
EN
2
3

INPUTS		SW
A	EN	
X	L	OP
L	H	6 7
H	H	6 7

FIG. 4
CCU 300P
AU 15
AUDIO MOD.
M.J.H.S. 22.2.83

	OUTPUT / INPUT I KHz	CCU-300			CCU ADAPTOR			CONSOLE	
		INCOM		PGM	INCOM		PGM	INCOM	
		2 WIRE	4 WIRE		2 WIRE	4 WIRE		(26,7) 2 WIRE	(27,8) 4 WIRE
ORIGINAL	CCU-300 INCOM				OSC.	+10 -12.5		+6.5 -9	+7 -9.5
	CCU ADAPTOR INCOM	+8 -31	+8.5 -12					+6.5 -18	+8.5 -16.5
	MASTER CONSOLE INCOM (26,7)	+8 -9	+8.5 -8.5		OSC.	+10 -12.5			
	MASTER CONSOLE PGM (13,31)			+8.5 -4			+10 -10		
MODIFIED	CCU-300 INCOM				+14 +4.5	+16.5 0		+3.5 +4.5	+4.5 +4.5
	CCU ADAPTOR INCOM	+14 -7.5	+16 +0.5					+14 -3	+16 -1.5
	MASTER CONSOLE INCOM (26,7)	+16 +4	+16 +4		+16.5 0	+16.5 0			
	MASTER CONSOLE PGM (13,31)			16 +3			16 +1		

The table shows the highest input levels that can be applied without causing clipping at the outputs, and the corresponding levels before and after modification of the CCU circuits.

M.J.H.S
7/3/83

ENGINEERING BULLETIN

SONY Broadcast

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MAINTENANCE AND MODIFICATION INFORMATION

PRODUCT MANAGEMENT

IMPROVEMENT IN PERFORMANCE OF CCU-300P TALKBACK CIRCUITS

Product Type: CCU-300P

Date: 28th February, 1983
Number: E-BVP-002

General

It is possible to improve the performance of the CCU-300P talkback circuits using the following modifications:

Parts Required

Metal Resistors	1.5K , 1/8W	1-214-561-00
	4.7K , 1/8W	1-214-573-00
	12 K , 1/8W	1-214-583-00
	15K , 1/8W	1-214-585-00
	22K , 1/8W	1-214-589-00

Modification Procedure

1. **AU 14 Board** (See Figs. 1 and 2)

    a) Remove R37 and R38.
    b) Replace R15 with 12K resistor.
    c) Replace R24 with 1.5K resistor.
    d) Cut ground track in two places as shown.
    e) Connect three wires as shown.

2. **AU 15 Board** (See Figs. 3 and 4)

    a) Remove R16.✓
    b) Replace R31 with 15K resistor. ✓
    c) Connect 4.7K resistor in parallel with R29.✓
    d) Connect 22K resistor in parallel with R15. ✓
    e) Cut tracks in three places as shown.
    f) Connect three wires as shown.

M.J.H. Steele

M.J.H. STEELE

E.MJHS/PAP

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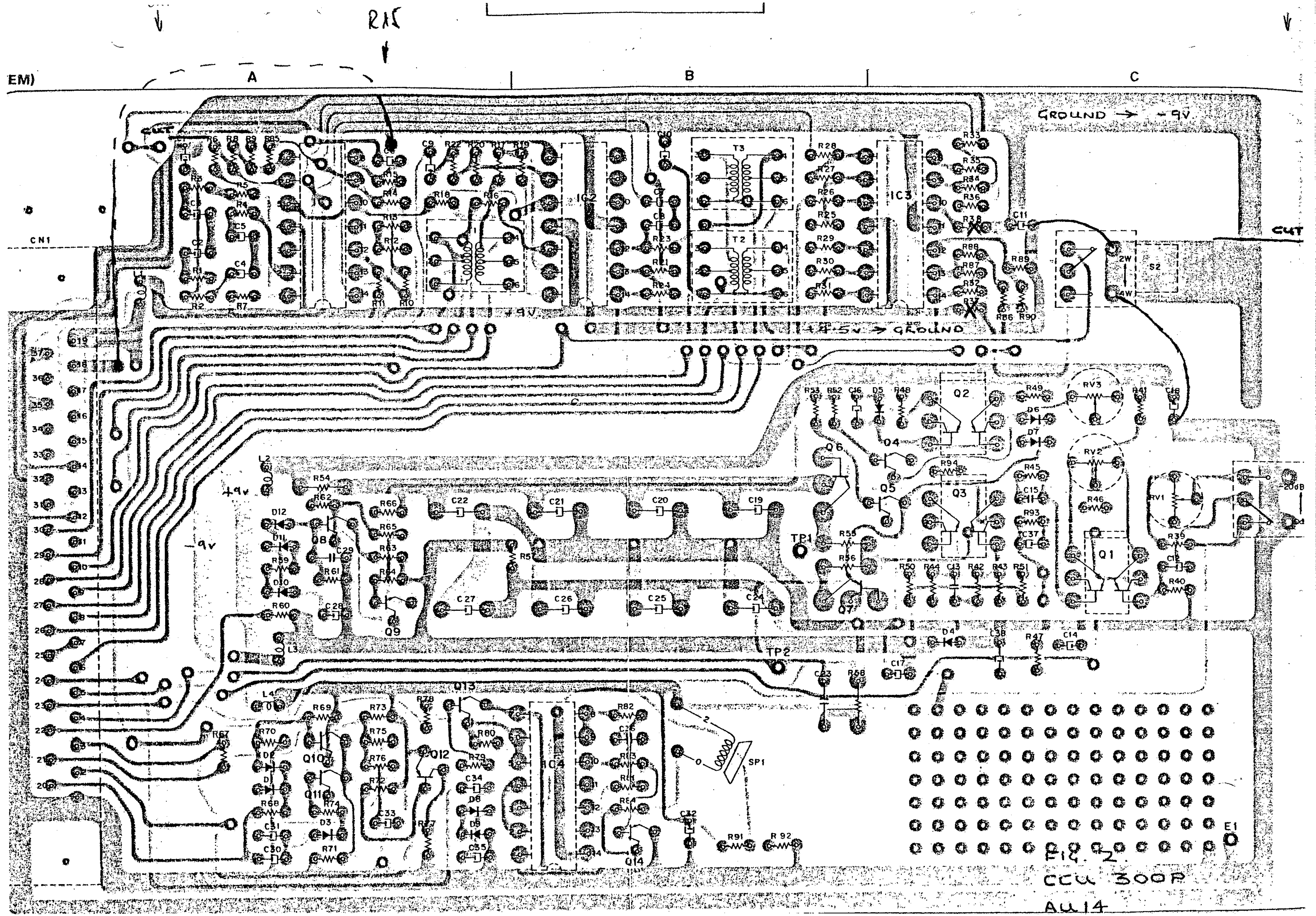
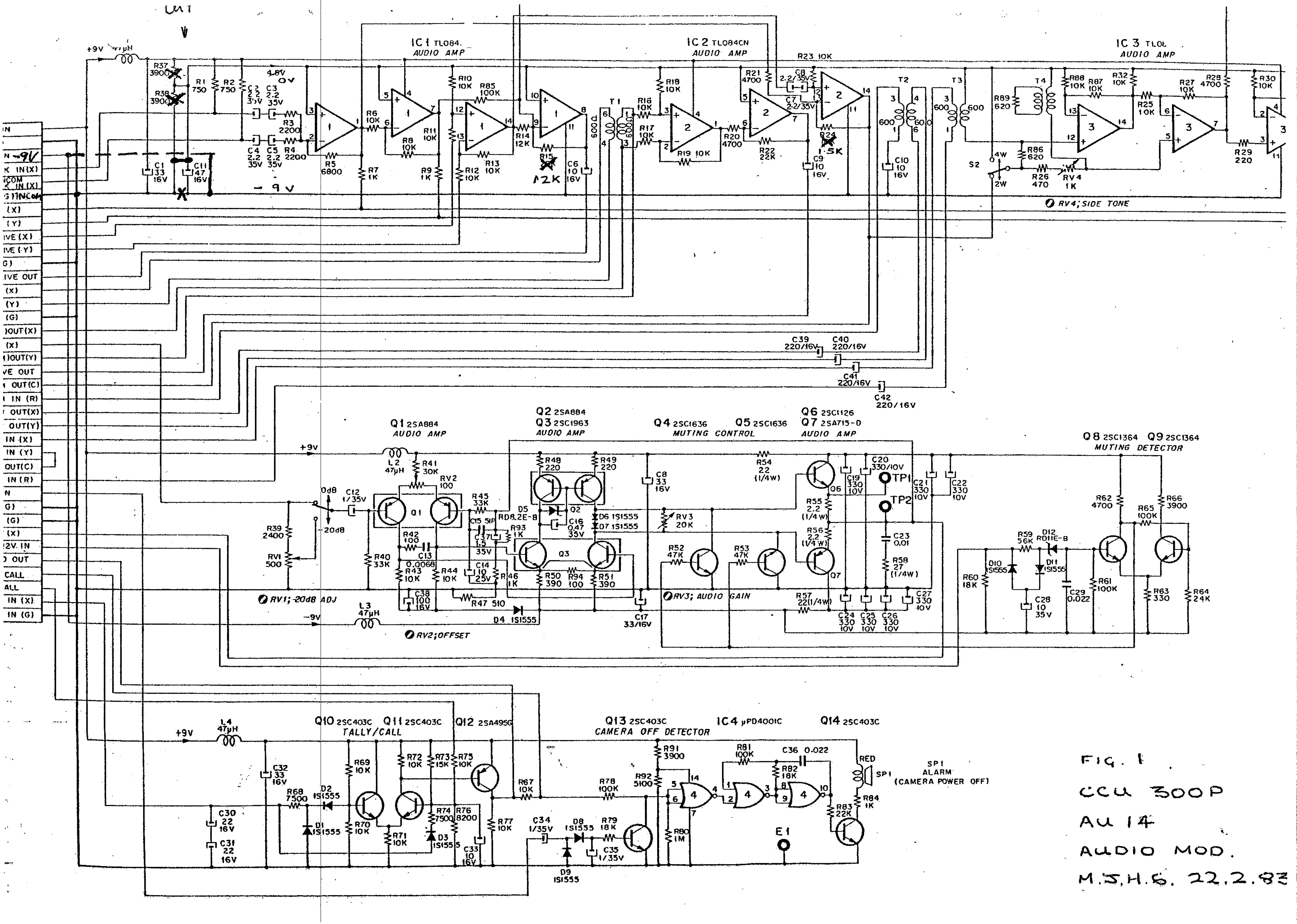

EM)
A
B
C
R15
CUT
GROUND → -9V
CUT
CN1
+9V
+4.5V → GROUND
+9v
-9v
IC2
IC3
IC4
T2
T3
S2
2W
4W
RV1
RV2
RV3
-20dB
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
TP1
TP2
SP1
L2
L3
L4
E1

Fig. 2
CCU 300P
AU14



IC1 TL084
AUDIO AMP
IC2 TL084CN
AUDIO AMP
IC3 TL0..
AUDIO AMP
+9V
-9V
4.8V
0V
-9 V
R1 750
R2 750
R3 2200
R4 2200
R5 6800
R6 10K
R7 1K
R8 10K
R9 1K
R10 10K
R11 10K
R12 10K
R13 10K
R14 12K
R15 12K
R16 10K
R17 10K
R18 10K
R19 10K
R20 4700
R21 4700
R22 22K
R23 10K
R24 1.5K
R25 10K
R26 470
R27 10K
R28 4700
R29 220
R30 10K
R32 10K
R37 3900
R38 3900
R85 100K
R86 620
R87 10K
R88 10K
R89 620
C1 33 16V
C2 2.2 35V
C3 2.2 35V
C4 2.2 35V
C5 2.2 35V
C6 10 16V
C7 2.2/35V
C8 2.2/35V
C9 10 16V
C10 10 16V
C11 47 16V
T1
T2
T3
T4
600
S2
4W
2W
RV4 1K
RV4; SIDE TONE
C39 220/16V
C40 220/16V
C41 220/16V
C42 220/16V
Q1 2SA884
AUDIO AMP
Q2 2SA884
Q3 2SC1963
AUDIO AMP
Q4 2SC1636
MUTING CONTROL
Q5 2SC1636
Q6 2SC1126
Q7 2SA715-D
AUDIO AMP
Q8 2SC1364
Q9 2SC1364
MUTING DETECTOR
L2 47μH
L3 47μH
0dB
-20dB
C12 1/35V
R39 2400
RV1 500
RV1; -20dB ADJ
R40 33K
R41 30K
RV2 100
RV2; OFFSET
R42 100
C13 0.0068
R43 10K
R44 10K
C38 100 16V
R45 33K
C15 51P
C37 1.5 35V
C14 10 25V
R93 1K
R46 1K
R47 510
D4 1S1555
D5 RD8.2E-B
C16 0.47 35V
D6 1S1555
D7 1S1555
R48 220
R49 220
R50 390
R94 100
R51 390
C17 33/16V
C8 33 16V
RV3 20K
RV3; AUDIO GAIN
R52 47K
R53 47K
R54 22 (1/4W)
R55 2.2 (1/4W)
R56 2.2 (1/4W)
R57 22(1/4W)
C19 330 10V
C20 330/10V
TP1
TP2
C21 330 10V
C22 330 10V
C23 0.01
R58 27 (1/4W)
C24 330 10V
C25 330 10V
C26 330 10V
C27 330 10V
R59 56K
D12 RD11E-B
D10 1S1555
D11 1S1555
R60 18K
C28 10 35V
C29 0.022
R61 100K
R62 4700
R63 330
R64 24K
R65 100K
R66 3900
Q10 2SC403C
Q11 2SC403C
TALLY/CALL
Q12 2SA495G
Q13 2SC403C
CAMERA OFF DETECTOR
IC4 μPD4001C
Q14 2SC403C
L4 47μH
C30 22 16V
C31 22 16V
C32 33 16V
R68 7500
D1 1S1555
D2 1S1555
R69 10K
R70 10K
R71 10K
R72 10K
R73 15K
R74 7500
D3 1S1555
R75 10K
R76 8200
C33 10 16V
R67 10K
R77 10K
C34 1/35V
D8 1S1555
D9 1S1555
R78 100K
R79 18K
C35 1/35V
R91 3900
R92 5100
R80 1M
R81 100K
R82 18K
C36 0.022
E1
R83 22K
R84 1K
RED
SP1
SP1 ALARM (CAMERA POWER OFF)
IN
-9V
K IN(X)
COM K IN(X)
G INCom
(X)
(Y)
IVE (X)
IVE (Y)
(G)
IVE OUT
(X)
(Y)
(G)
OUT(X)
(X)
OUT(Y)
VE OUT
OUT(C)
IN (R)
OUT(X)
OUT(Y)
IN (X)
IN (Y)
OUT(C)
IN (R)
N
(G)
(G)
(X)
12V. IN
O OUT
CALL
ALL
IN (X)
IN (G)

FIG. 1
CCU 300P
AU 14
AUDIO MOD.
M.J.H.G. 22.2.83

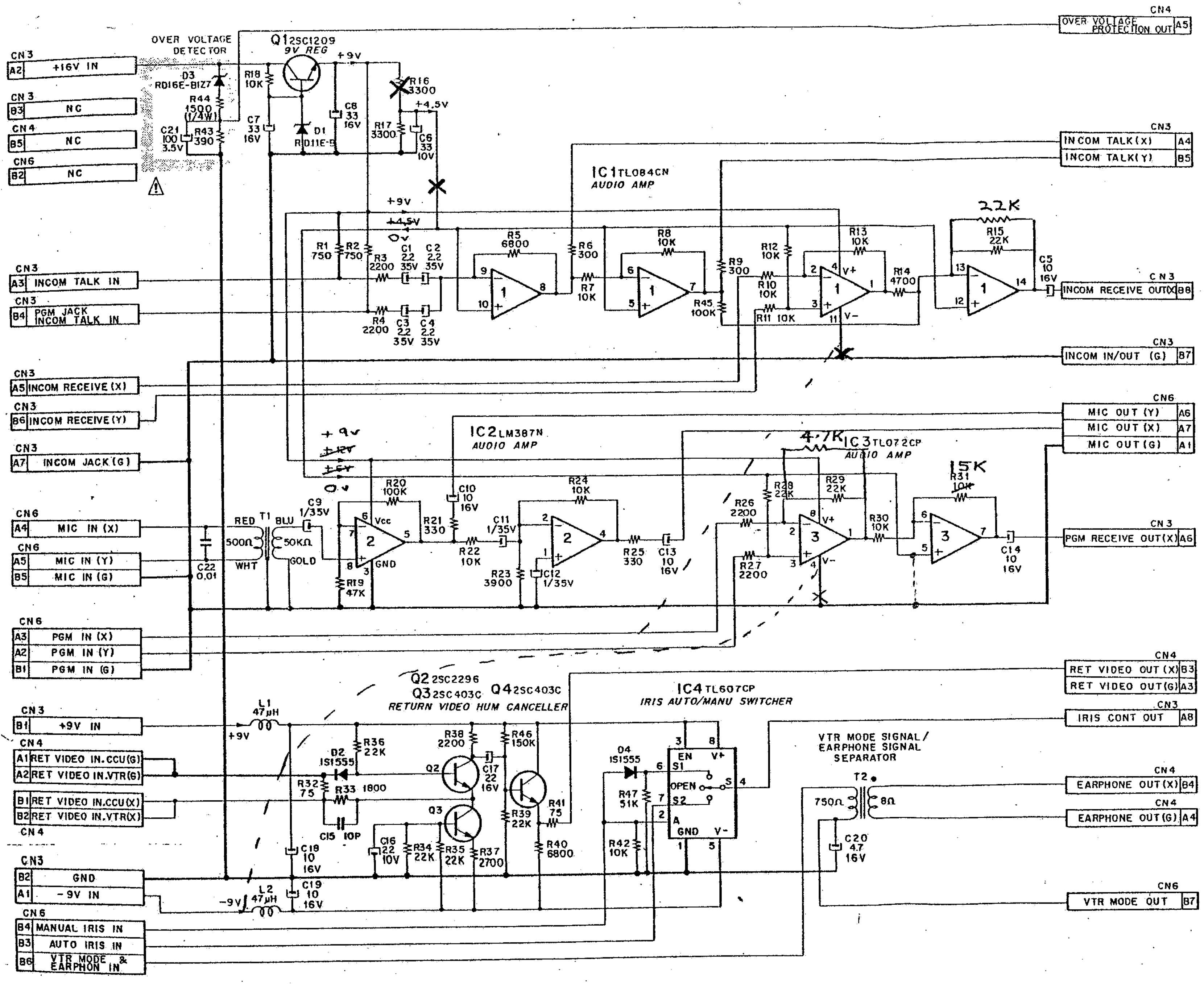

CN3 A2 +16V IN
CN3 B3 NC
CN4 B5 NC
CN6 B2 NC
OVER VOLTAGE DETECTOR
D3 RD16E-B1Z7
R44 1500 (1/4W)
R43 390
C21 100 3.5V
Q1 2SC1209 9V REG
R18 10K
C7 33 16V
D1 RD11E-B
C8 33 16V
+9V
R16 3300
R17 3300
C6 33 10V
+4.5V
CN4 OVER VOLTAGE PROTECTION OUT A5
IC1 TL084CN AUDIO AMP
CN3 INCOM TALK (X) A4
INCOM TALK (Y) B5
+9V
+4.5V
0V
R1 750
R2 750
R3 2200
C1 2.2 35V
C2 2.2 35V
R4 2200
C3 2.2 35V
C4 2.2 35V
R5 6800
R6 300
R7 10K
R8 10K
R9 300
R45 100K
R10 10K
R11 10K
R12 10K
R13 10K
R14 4700
22K
R15 22K
C5 10 16V
CN3 INCOM RECEIVE OUT(X) B8
CN3 A3 INCOM TALK IN
CN3 B4 PGM JACK INCOM TALK IN
CN3 INCOM IN/OUT (G) B7
CN3 A5 INCOM RECEIVE (X)
CN3 B6 INCOM RECEIVE (Y)
CN3 A7 INCOM JACK (G)
CN6 MIC OUT (Y) A6
MIC OUT (X) A7
MIC OUT (G) A1
IC2 LM387N AUDIO AMP
+9V
+12V
+6V
0V
4.7K
IC3 TL072CP AUDIO AMP
15K
R31 10K
CN6 A4 MIC IN (X)
CN6 A5 MIC IN (Y)
B5 MIC IN (G)
C22 0.01
T1 RED BLU 500Ω 50KΩ WHT GOLD
C9 1/35V
R20 100K
Vcc
GND
R19 47K
R21 330
R22 10K
C10 10 16V
C11 1/35V
R23 3900
C12 1/35V
R24 10K
R25 330
C13 10 16V
R26 2200
R27 2200
R28 22K
R29 22K
R30 10K
C14 10 16V
CN3 PGM RECEIVE OUT(X) A6
CN6 A3 PGM IN (X)
A2 PGM IN (Y)
B1 PGM IN (G)
Q2 2SC2296
Q3 2SC403C
Q4 2SC403C
RETURN VIDEO HUM CANCELLER
IC4 TL607CP IRIS AUTO/MANU SWITCHER
CN4 RET VIDEO OUT (X) B3
RET VIDEO OUT (G) A3
CN3 IRIS CONT OUT A8
CN3 B1 +9V IN
L1 47μH
+9V
CN4 A1 RET VIDEO IN.CCU(G)
A2 RET VIDEO IN.VTR(G)
B1 RET VIDEO IN.CCU(X)
B2 RET VIDEO IN.VTR(X)
CN4
D2 1S1555
R32 75
R33 1800
C15 10P
R36 22K
R38 2200
C17 22 16V
R46 150K
R39 22K
R41 75
R40 6800
C16 22 10V
R34 22K
R35 22K
R37 2700
C18 10 16V
C19 10 16V
L2 47μH
-9V
D4 1S1555
R47 51K
R42 10K
EN S1 OPEN S S2 A GND V+ V-
VTR MODE SIGNAL/ EARPHONE SIGNAL SEPARATOR
T2 750Ω 8Ω
C20 4.7 16V
CN4 EARPHONE OUT(X) B4
CN4 EARPHONE OUT (G) A4
CN6 VTR MODE OUT B7
CN3 B2 GND
A1 -9V IN
CN6 B4 MANUAL IRIS IN
B3 AUTO IRIS IN
B6 VTR MODE & EARPHON IN

FIG. 3
CCU 300P
AU15.
AUDIO MOD.

SONY®
TECHNICAL NEWS

No. VTRW80-117

Model
BVP-300 series
CCU-300 series

Title

CHANGE OF "SWITCH, MICRO".

Date 1980. 11. 7

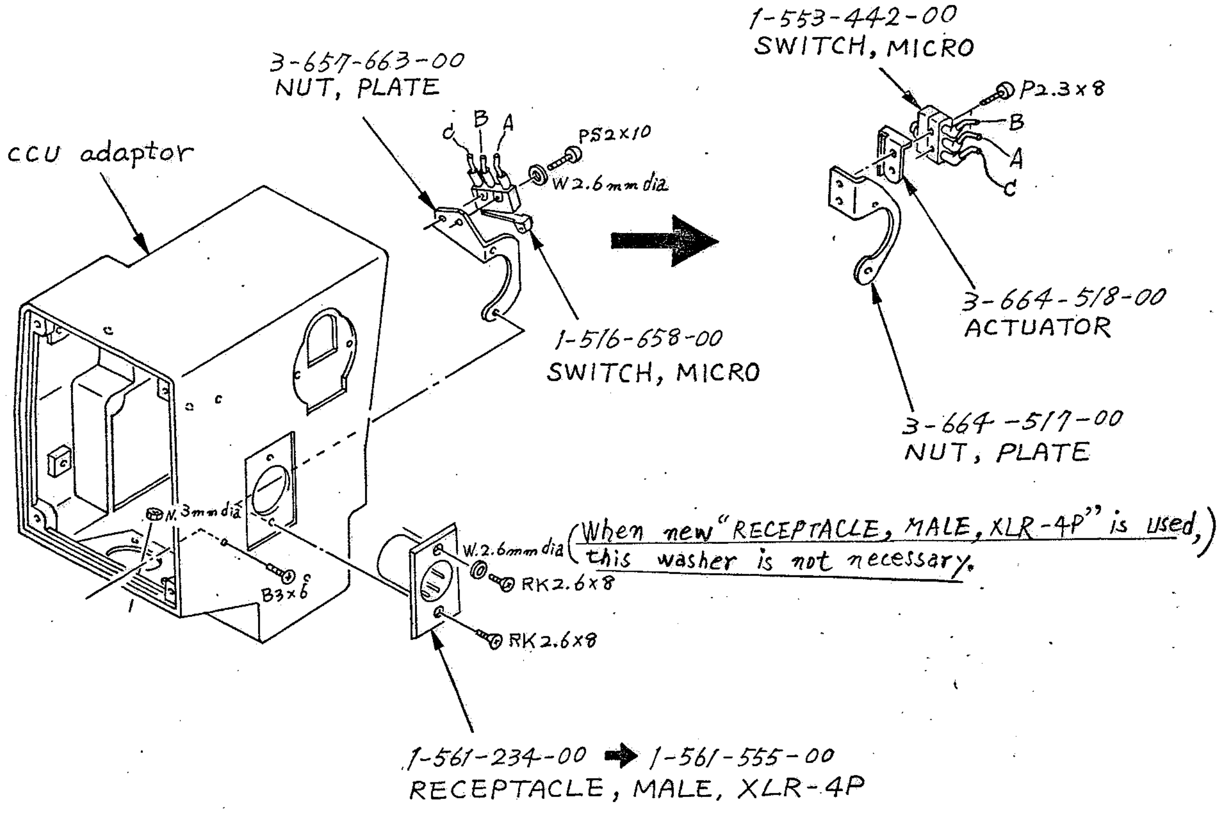
SONY CORP.
VIDEO DIVISION

☐ Service Technique ☐ Product Correction ☑ Product Improvement ☐ Other

Description

1. The "SWITCH, MICRO" is used in the CCU adaptor of CCU-300 and in the connector box of BVP-300 has been changed from following serial number, in order to make its operation more reliable, and to discontinue the production of it.
2. So the wirings of "SWITCH, MICRO", "NUT, PLATE", "RECEPTACLE, MALE, XLR-4P" have been changed, and also "ACTUATOR" has been added.
3. When "SWITCH, MICRO" is replaced in former machine, order all new parts.

(CCU-300)


1-553-442-00
SWITCH, MICRO
3-657-663-00
NUT, PLATE
P2.3×8
B
A
C
C B A
PS2×10
W2.6mm dia
CCU adaptor
3-664-518-00
ACTUATOR
1-516-658-00
SWITCH, MICRO
3-664-517-00
NUT, PLATE
N.3mm dia
W.2.6mm dia
B3×6
RK2.6×8
RK2.6×8
1-561-234-00 → 1-561-555-00
RECEPTACLE, MALE, XLR-4P

(When new "RECEPTACLE, MALE, XLR-4P" is used, this washer is not necessary.)

Notes For Parts Administration

☐ 1. Stock both old and new parts, while new parts cannot be used in old model.
☐ 2. Stock new parts, while new parts can be used in both old and new models.
☑ 3. Stock new parts after liquidation of old parts.
☐ 4. Not necessary to stock new parts.
☐ 5. Other

Planned by : T. Koshimura Proposed by : H. Hosho Approved by : VIDEO '80. 11. -7 T.HIRA

SONY®
TECHNICAL NEWS

No. VTRW80-117

Model
BVP-300 series
CCU-300 series

Date
1980. 11. 7

SONY CORP.
VIDEO DIVISION

Title

CHANGE OF "SWITCH, MICRO".

☐ Service Technique ☐ Product Correction ☑ Product Improvement ☐ Other

Description

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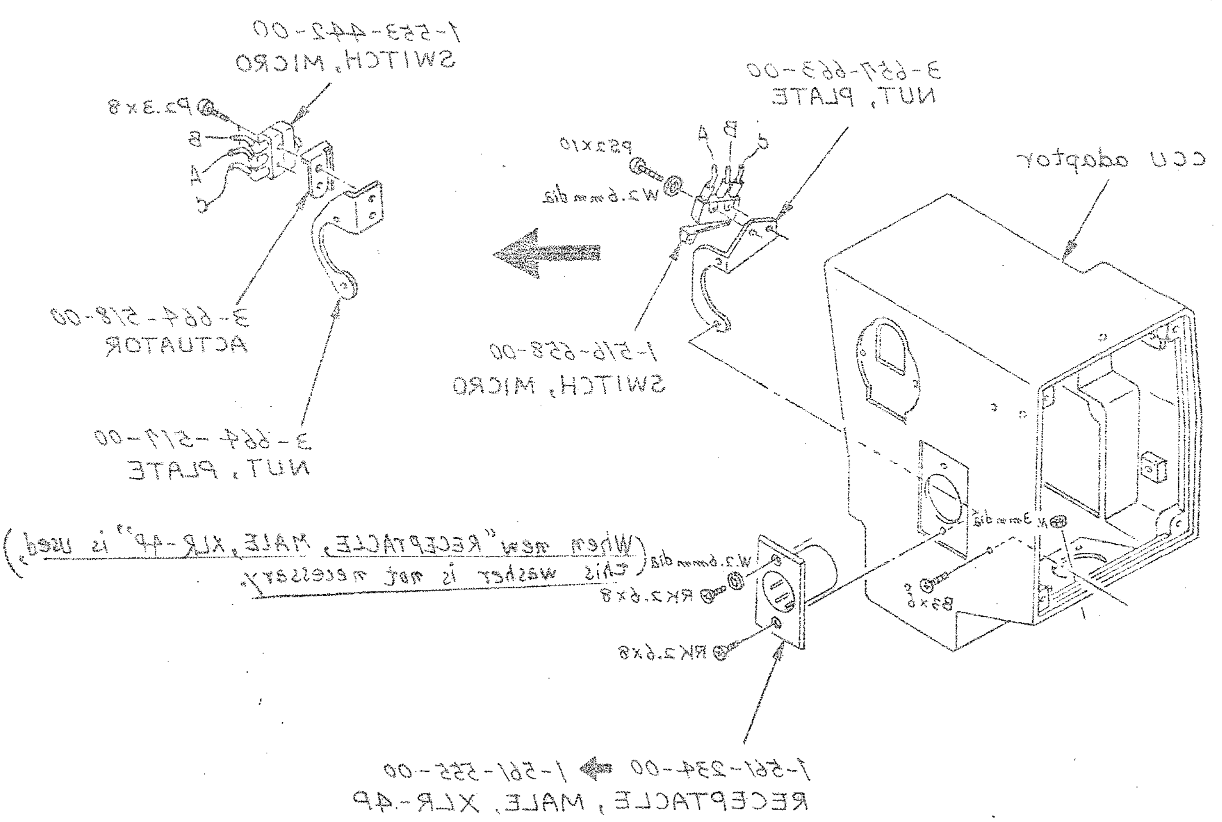
(CCU-300)


1-553-442-00
SWITCH, MICRO
P2.3x8
B
A
C
3-664-518-00
ACTUATOR
3-664-517-00
NUT, PLATE
3-657-663-00
NUT, PLATE
PS2x10
A
B
C
W2.6mm dia
1-516-658-00
SWITCH, MICRO
CCU adaptor
W3mm dia
B3x6
W2.6mm dia
RK2.6x8
RK2.6x8
1-561-234-00 ➡ 1-561-555-00
RECEPTACLE, MALE, XLR-4P

(When new "RECEPTACLE, MALE, XLR-4P" is used, this washer is not necessary.)

Notes For Parts Administration

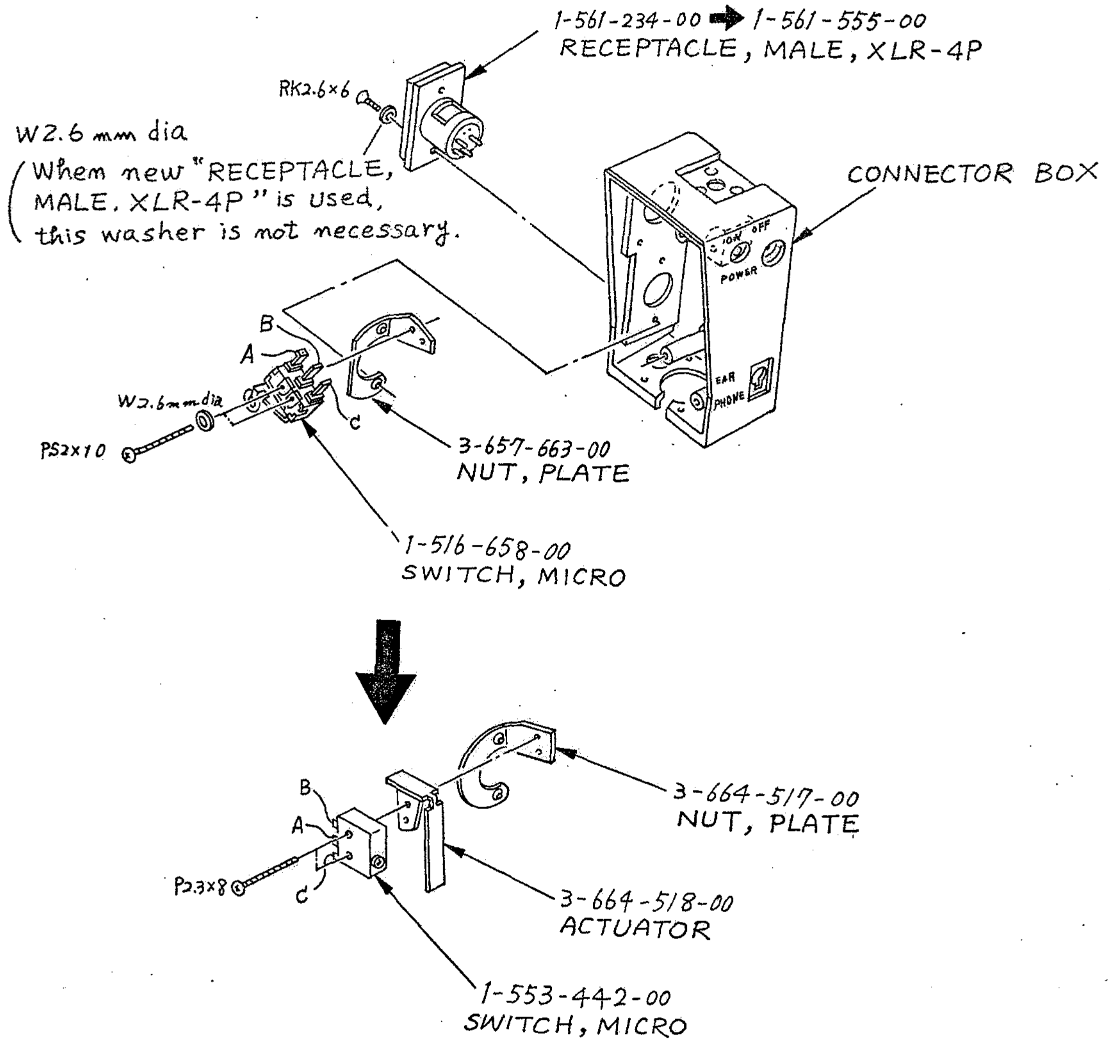
☐1. Stock both old and new parts, while new parts cannot be used in old model.
☐2. Stock new parts, while new parts can be used in both old and new models.
☑3. Stock new parts after liquidation of old parts.
☐4. Not necessary to stock new parts.
☐5. Other

Planned by : Proposed by : Approved by :

'80. 11. -7

Sheet 1 of 3

(BVP-300)


1-561-234-00 ➔ 1-561-555-00
RECEPTACLE, MALE, XLR-4P
RK2.6×6
W2.6 mm dia
(When new "RECEPTACLE, MALE, XLR-4P" is used, this washer is not necessary.)
CONNECTOR BOX
ON OFF
POWER
EAR PHONE
B
A
C
W2.6mm dia
PS2x10
3-657-663-00
NUT, PLATE
1-516-658-00
SWITCH, MICRO
B
A
C
P2.3×8
3-664-517-00
NUT, PLATE
3-664-518-00
ACTUATOR
1-553-442-00
SWITCH, MICRO

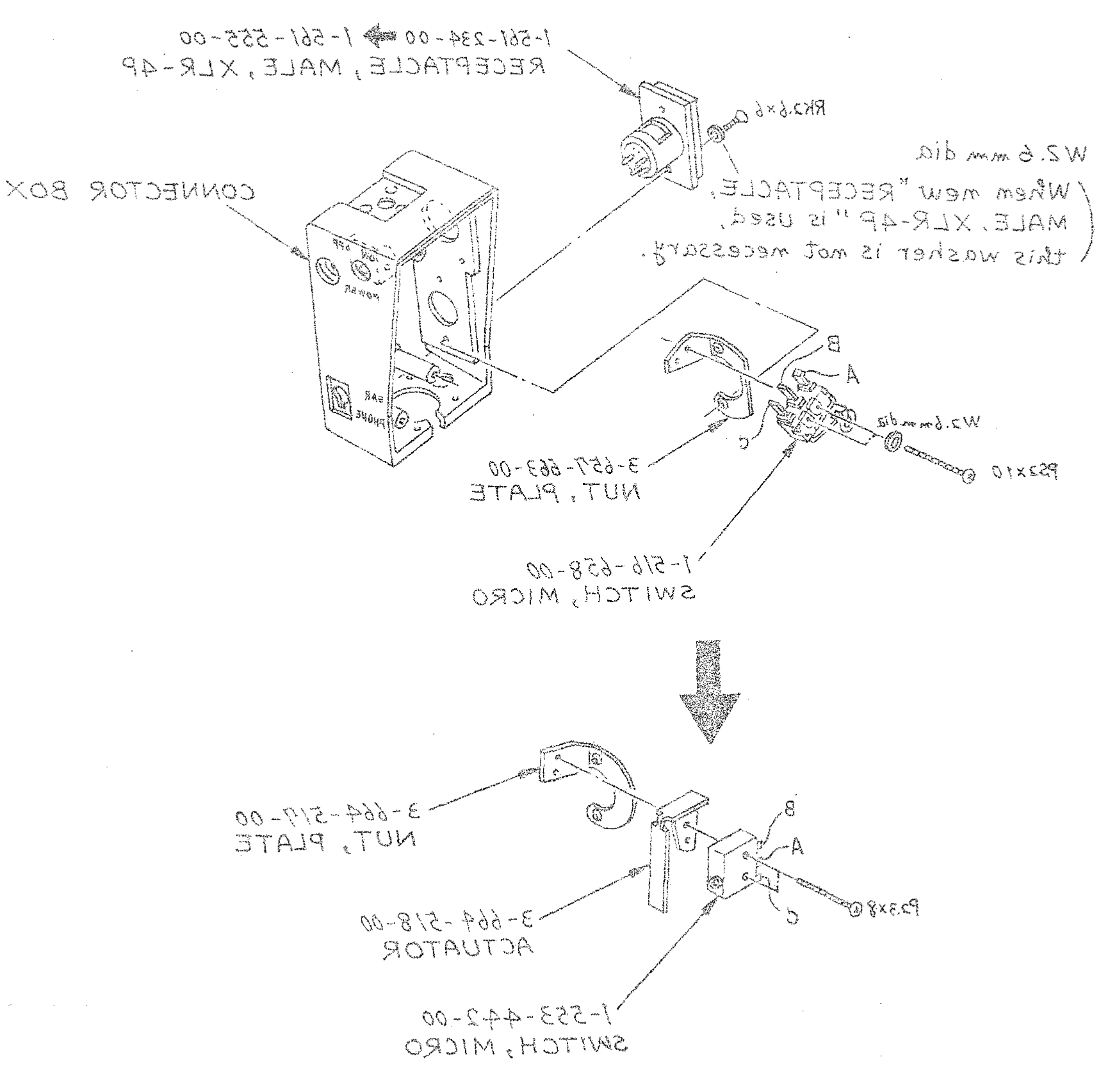
4. Serial number of machines that are modified at the factory.

CCU-300 (U/C) ----- 10801 and higher
CCU-300P --------- 10901 and higher
CCU-300PM-------- 10101 and higher
BVP-300 (U/C) ----- 11158 and higher
BVP-300P --------- 10946 and higher
BVP-300S --------- 10011 and higher

SONY®
TECHNICAL NEWS

No. VTRW80-117

(BVP-300)


1-561-234-00 ➡ 1-561-555-00
RECEPTACLE, MALE, XLR-4P
RK2.6x6
W2.6mm dia
(When new "RECEPTACLE, MALE, XLR-4P" is used, this washer is not necessary.)
CONNECTOR BOX
OFF
ON
POWER
EAR PHONE
B
A
C
W2.6mm dia
PS2x10
3-657-663-00
NUT, PLATE
1-516-658-00
SWITCH, MICRO
3-664-517-00
NUT, PLATE
B
A
C
P3x8
3-664-518-00
ACTUATOR
1-553-442-00
SWITCH, MICRO

4. Serial number of machines that are modified at the factory.

CCU-300 (U/C) ----- 10801 and higher
CCU-300P --------- 10901 and higher
CCU-300PM-------- 10101 and higher
BVP-300 (U/C) ----- 11158 and higher
BVP-300P --------- 10946 and higher
BVP-300S --------- 10011 and higher

5. Use of new and former parts.

	parts number	Serial number of machines CCU-300(U/C) - - - 10001~10800 CCU-300P- - - - - - - 10001~10900 CCU-300PM - - - - - 10001~10100 BVP-300(U/C) - - - 10001~11157 BVP-300P- - - - - - - 10001~10945 BVP-300S- - - - - - - 10001~10010	Serial number of machines CCU-300(U/C) - - - 10801 and higher CCU-300P- - - - - - - 10901 and higher CCU-300PM - - - - - 10101 and higher BVP-300(U/C) - - - 11158 and higher BVP-300P- - - - - - - 10946 and higher BVP-300S- - - - - - - 10011 and higher
former parts	1-516-658-00	possible	impossible
new parts	1-553-442-00	impossible	possible
former parts	3-657-663-00	possible	impossible
new parts	3-664-517-00	impossible	possible
former parts	1-561-234-00	possible	impossible
new parts	1-561-555-00	impossible	possible
new parts	3-664-518-00	impossible	possible

5. Use of new and former parts.

	parts number	Serial number of machines CCU-300(U/C)---10001~10800 CCU-300P------10001~10900 CCU-300PM-----10001~10100 BVP-300(U/C)---10001~11157 BVP-300P------10001~10945 BVP-300S------10001~10010	Serial number of machines CCU-300(U/C)---10801 and higher CCU-300P------10901 and higher CCU-300PM-----10101 and higher BVP-300(U/C)---11158 and higher BVP-300P------10946 and higher BVP-300S------10011 and higher
former parts	1-516-658-00	possible	impossible
new parts	1-553-442-00	impossible	possible
former parts	3-657-663-00	possible	impossible
new parts	3-664-517-00	impossible	possible
former parts	1-561-234-00	possible	impossible
new parts	1-561-555-00	impossible	possible
new parts	3-664-518-00	impossible	possible

SONY®

TECHNICAL NEWS

No. VTRW81-1034

Model
CCU-300 series

Date
1981. 3. 30

SONY CORP.
VIDEO DIVISION

Title

CCU-300 series

OPERATION AND MAINTENANCE MANUAL CHANGE INFORMATION

☐ Service Technique ☐ Product Correction ☐ Product Improvement ☑ Other

Description

- The CCU-300 series Manual had been changed several times in accordance with improvement as shown in table below.

- For servicing, please use combination of all the latest revised manuals with circle ○.

model (dest.)	Edition No.	Part No.	Serial No. (can be used.)	Serial No. (on the front cover)	
CCU-300 (U/C)	1st Edition	2-270-684-11	10001 to 10200	10001 to 10100	○
	2nd Edition	2-270-684-12	10201 to 10300	10201 and higher	
	Supplement-1	9-966-564-81	10001 and higher	10001 and higher	○
	2nd Edition Rev.-1	2-270-684-13	10201 to 10500	10201 and higher	
	2nd Edition Rev.-2	2-270-684-14	10201 to 10600	10201 and higher	
	2nd Edition Rev.-3	2-270-684-15	10201 and higher	10201 and higher	○
CCU-300P (AEP)	1st Edition	2-270-684-21	10001 to 10200	10001 to 10200	○
	2nd Edition	2-270-684-22	10201 to 10400	10201 and higher	
	2nd Edition Rev.-1	2-270-684-23	10201 to 10600	10201 and higher	
	Supplement-1	9-966-565-81	10001 and higher	10001 and higher	○
	2nd Edition Rev.-2	2-270-684-24	10201 to 10700	10201 and higher	
	2nd Edition Rev.-3	2-270-684-25	10201 to 11000	10201 and higher	
	2nd Edition Rev.-4	2-270-684-26	10201 and higher	10201 and higher	○
CCU-300PM (BRZ)	1st Edition	2-270-684-31	10001 and higher	10001 and higher	○

Notes For Parts Administration

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☐2. Stock new parts, while new parts can be used in both old and new models.
☐3. Stock new parts after liquidation of old parts.
☐4. Not necessary to stock new parts.
☐5. Other

Planned by : K. Katoh Proposed by : H. Hoshi Approved by : VIDEO 56. 4. -1 T. HIRA